
City of Grand Island



Tuesday, May 05, 2009
Study Session Packet

City Council:

Larry Carney
Scott Dugan
John Gericke
Peg Gilbert
Chuck Haase
Robert Meyer
Mitchell Nickerson
Bob Niemann
Kirk Ramsey
Jose Zapata

Mayor:

Margaret Hornady

City Administrator:

Jeff Pederson

City Clerk:

RaNae Edwards

7:00:00 PM
Council Chambers - City Hall
100 East First Street

Call to Order

This is an open meeting of the Grand Island City Council. The City of Grand Island abides by the Open Meetings Act in conducting business. A copy of the Open Meetings Act is displayed in the back of this room as required by state law.

The City Council may vote to go into Closed Session on any agenda item as allowed by state law.

Pledge of Allegiance

Roll Call

A - SUBMITTAL OF REQUESTS FOR FUTURE ITEMS

Individuals who have appropriate items for City Council consideration should complete the Request for Future Agenda Items form located at the Information Booth. If the issue can be handled administratively without Council action, notification will be provided. If the item is scheduled for a meeting or study session, notification of the date will be given.

B - RESERVE TIME TO SPEAK ON AGENDA ITEMS

This is an opportunity for individuals wishing to provide input on any of tonight's agenda items to reserve time to speak. Please come forward, state your name and address, and the Agenda topic on which you will be speaking.

MAYOR COMMUNICATION

This is an opportunity for the Mayor to comment on current events, activities, and issues of interest to the community.



City of Grand Island

Tuesday, May 05, 2009

Study Session

Item X

Presentation on Waste Water Capital Improvement Plan and Cost-Of-Service based Rate Study

Staff Contact: Steve Riehle, City Engineer/Public Works Director

Council Agenda Memo

From: Steven P. Riehle, Public Works Directore

Meeting: May 5, 2009

Subject: Presentation on Waste Water Capital Improvement Plan
and Cost-Of-Service based Rate Study

Item #'s: 1

Presenter(s): Steven P. Riehle, Public Works Director

Background

Agreement with Black & Veatch for Digesters and Rate Study

An agreement with Black & Veatch of Kansas City, Missouri for engineering consulting services related to a digester complex was approved by the council on August 26, 2008. As preliminary engineering work on the digester complex progressed, it became apparent that selection of the design and size of the digester complex would rely heavily on what other capital improvement projects were needed in the near future and the impact on the rates paid by sanitary sewer customers. An amendment to the agreement that added work for a Cost-Of-Services based Rate Study with associated schedule changes was approved by the council on December 16, 2008.

Waste Water Infrastructure

The sanitary sewer collection system has mains that have been in service for over a century with some mains in the downtown area dating back to the 1890's. The collection system contains almost 230 miles of sanitary sewer mains, 17 sewage lift stations and a waste water treatment plant that is averaging 12 million gallons per day of flow.

The division is a capital intensive operation because of the miles of pipeline to maintain and the gallons of waste water to treat. While there have been substantial improvements made at the plant over the years, there are still many improvements that are needed in the future. Many parts of the plant date back to the original construction in 1964. It's critical that the plant has the capacity to accommodate growth in our community, a new or expanded industry while continuing to meet environmental requirements for our discharge. Replacements, upgrades and expansions at the plant will be a continuous and on-going process.

Rate Study

The waste water division of the public works department is an enterprise fund with no property tax dollars used to support the division. The entire budget comes from waste water customers through sanitary sewer bills. The sewer bill for a residential customer is based on usage and standard strength for residential sewage. The sewer bill for commercial and industrial customers is based on usage plus an extra strength component.

A cost of service based rate study looks at all costs for the operation and allocates those costs of service to the customer classes according to the costs of providing service. Then rates are designed to equitably cover those costs. It's important that each customer pay their "fair" share of the costs for the city to own and operate the collection system and the waste water treatment plant.

The last rate study was conducted in 1979 with rate increases since that time applied uniformly across the board with rate increases since 1996 matching close to the Consumer Price Index. The new rate study will recommend rates that match up with the cost of providing the service.

Discussion

2009 through 2010 Capital Improvement Plan

Consultant Black & Veatch worked with city staff to put together a short term capital improvement projects budget through 2013 for the collection system, lift stations and waste water treatment plant. This list of capital improvement projects is part of the PowerPoint for tonight council meeting. Long term capital improvement projects will be part of the comprehensive plan being prepared by CH2MHill under an agreement that was amended at the April 28, 2008 council meeting.

Major projects in the 2009 through 2010 Capital Improvement Plan

Digester Complex

A digester complex remains the best long term alternative for dealing with sludge loadings at the plant. Black & Veatch engineers have studied the different designs and sizes for a digester complex and will make a recommendation at the meeting.

Additional Final Clarifier

The treatment plant needs an additional final clarifier for the winter months to accommodate current & future loadings, maintain a minimal reserve and maintain compliance with the lower ammonia limits in the new discharge permit that took effect on October 1, 2008.

Aeration Basin Improvements

Aeration basin improvements are needed for the summer months to accommodate current & future ammonia loadings to maintain compliance with the lower ammonia limits in the new discharge permit.

Replacement Projects for the Collection System

The sanitary sewer collection system is aging and it is imperative that adequate funds are allocated to maintain the system. One only has to look at the age of the infrastructure and the failures we've had to appreciate the need.

Rate Study

The standard strength for residential sewage is currently 300 mg/L for Biochemical Oxygen Demand and Suspended Solids. Tests of normal sewage indicated that that strength was closer to 250 mg/L which is reflected in the proposed rates presented in the rate study. The rate study used the following parameters before the extra strength charges are applicable.

Biochemical Oxygen Demand 250 mg/L

Suspended Solids 250 mg/L

Oil & Grease 100 mg/L

Ammonia 30 mg/L

The Cost-of-Service based Rate study will adjust the rates to the cost of providing the service. The excess strength limit for Biochemical Oxygen Demand and Suspended Solids has been reduced, the costs associated with the collection system have been allocated to the appropriate users, and the costs to treat extra strength sewage have been passed to the customers that generate the extra strength sewage. The average residential customer, contributing 700 cubic feet of wastewater flow, will see a \$0.56 per month (before sales tax) or 3.1% increase in their monthly sanitary sewer bill beginning in October 2009. For a listing of the typical sanitary sewer bills see table 20 of the rate study.

Conclusion

Public Works staff will bring forward a resolution for council to approve a digester option and a separate resolution to adopt the rate study at a future council meeting. The adoption of sanitary sewer rates will happen with normal budget process this summer.

RATE STUDY TABLE
May 1, 2009

Table 1
City of Grand Island, NE
Wastewater Utility
Historical and Projected Number of Bills

	Historical				Projected				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Residential	144,957	144,698	146,834	148,449	149,549	150,649	151,749	152,849	153,949
Residential - Suburb	555	540	536	532	532	532	532	532	532
Residential - Commercial	6,460	6,413	6,496	6,653	6,703	6,753	6,803	6,853	6,903
Interdepartmental - Commercial									
JB Swift	12	12	12	12	12	12	12	12	12
All Other	19,219	22,585	22,704	22,705	22,715	22,725	22,735	22,745	22,755
Commercial - Suburb	108	108	64	48	48	48	48	48	48
Total	171,311	174,356	176,646	178,399	179,559	180,719	181,879	183,039	184,199

Table 2

**City of Grand Island, NE
Wastewater Utility
Existing Wastewater Rates
(Effective October 1, 2008)**

Sewer Service Charge - \$/month	
All Customers	8.24
Volume Charge - \$/Ccf	
Low Strength Industrial Dischargers	0.4180
All Other Customers	1.3700
Excess Strength Surcharge - \$/lb	
BOD over 300 mg/l	0.2806
Suspended Solids over 300 mg/l	0.2180
Oil & Grease over 100 mg/l	0.0115
Low Strength Industrial Dischargers	
BOD over 0 mg/l	0.2806
Suspended Solids over 0 mg/l	0.2180
Oil & Grease over 0 mg/l	0.0115
Ammonia over 30 mg/l	0.3729
Hydrogen Sulfide over 0 mg/l	0.1252
Hydrogen Sulfide Flat Fee - \$/month	8,376.29
Ccf = Hundred Cubic Feet	
BOD = Biochemical Oxygen Demand	

Table 3
City of Grand Island, NE
Wastewater Utility
Historical and Projected Wastewater Revenue

	Historical					Projected				
	2004	2005	2006	2007	2008	2009 (a)	2010	2011	2012	2013
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Residential	2,680,957	2,532,044	2,401,430	2,494,436	2,573,636	2,677,000	2,696,700	2,716,400	2,736,100	2,755,800
Residential - Suburb	8,233	9,345	9,419	9,673	9,851	10,200	10,200	10,200	10,200	10,200
Residential - Commercial	349,914	340,352	333,000	334,846	353,917	368,200	371,000	373,700	376,400	379,200
Interdepartmental - Commercial (b)										
JB Swift (c)	0	0	0	0	6,003,361	2,089,600	2,089,600	2,089,600	2,089,600	2,089,600
All Other	4,748,158	5,789,243	6,133,695	7,389,492	1,750,843	1,407,400	1,408,000	1,408,700	1,409,300	1,409,900
Commercial - Suburb	2,032	2,376	2,634	2,272	2,571	2,700	2,700	2,700	2,700	2,700
Excess Strength (b) (d)						2,620,600	2,152,300	2,152,300	2,152,300	2,152,300
Total	7,789,293	8,673,360	8,880,177	10,230,719	10,694,179	9,175,700	8,730,500	8,753,600	8,776,600	8,799,700

(a) Reflects 3 percent revenue increase effective October 1, 2008.

(b) Historical Interdepartmental revenue includes Excess Strength revenue.

(c) JB Swift historical revenue included with Interdepartmental - Commercial All Other.

(d) Excess Strength revenue assumes normal strength limit for Biochemical Oxygen Demand and Suspended Solids of 250 milligram per liter beginning in 2010.

Table 4

**City of Grand Island, NE
Wastewater Utility
Historical and Projected Miscellaneous Revenue**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sewer Assessments (a)	Sewer Tap Fees	Other Inter- Gov.	Co-pay Health Insurance	Misc Surcharge Revenue (b)	Other Revenue (c)	Total
	\$	\$	\$	\$	\$	\$	\$
Historical							
2004	821,975	0	0	20,359	N/A	52,835	895,169
2005	397,370	37,971	0	21,773	N/A	70,476	527,591
2006	764,445	170,892	0	31,076	N/A	86,548	1,052,962
2007	465,898	44,429	0	31,361	N/A	246,187	787,875
2008	394,316	17,261	0	36,476	181,500	193,062	822,615
Projected							
2009	125,400	30,000	0	40,400	181,500	120,000	497,300
2010	199,000	30,000	0	40,400	181,500	120,000	570,900
2011	200,800	30,000	0	40,400	181,500	120,000	572,700
2012	183,100	30,000	0	40,400	181,500	120,000	555,000
2013	133,700	30,000	0	40,400	181,500	120,000	505,600

(a) Includes Interest Income on Sewer Assessments.

(b) Includes Sample Analysis revenue and fees from JB Swift for discharge in excess of permit limits.

(c) Includes Other Revenue, Sale of Fixed Assets, and Trade-in-Allowance.

Table 5
City of Grand Island, NE
Wastewater Utility
Historical and Projected Operation and Maintenance Expense

	Historical					Projected				
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
General Services	1,785,080	1,856,457	2,053,175	1,956,905	2,115,476	1,432,600	1,143,500	1,190,000	1,239,100	1,290,900
Collection Services	449,015	632,164	646,693	637,107	902,240	841,400	869,900	900,100	931,300	963,600
Wastewater Treatment	1,473,718	1,722,582	2,141,153	2,193,628	2,146,344	2,466,700	2,576,000	2,694,100	2,819,400	2,952,400
Solids Handling (a)	0	0	0	0	0	0	0	0	616,200	690,000
Compost Operations	288,077	634,959	1,255,917	1,466,880	1,983,889	1,862,300	1,976,900	2,106,400	0	0
Land Application (a)	0	0	0	0	0	0	0	0	910,000	962,400
Sludge Injection (b)	304,267	194,381	135	0	0	0	0	0	0	0
Total O&M Expense	4,300,156	5,040,544	6,097,073	6,254,520	7,147,949	6,603,000	6,566,300	6,890,600	6,516,000	6,859,300

(a) With the completion of the Digester project in 2012, Compost Operations will be replaced with Land Application and Solids Handling.

(b) Sludge Injection was discontinued in 2006.

Table 6

City of Grand Island, NE

Wastewater Utility

Proposed Capital Improvement Program

Line No.		2009	2010	2011	2012	2013	Total
		\$	\$	\$	\$	\$	\$
1	Sewer Mains	1,250,000	600,000	1,600,000	600,000	1,600,000	5,650,000
2	Liquid Oxygen	0	0	0	0	0	0
3	Lift Stations	411,400	265,200	0	100,000	3,862,700	4,639,300
	Wastewater Treatment						
4	Raw Water Pumping	0	0	0	0	0	0
5	Preliminary Treatment	0	0	884,400	4,298,500	842,300	6,025,200
6	Primary Sedimentation/Clarifiers	980,100	0	0	0	0	980,100
7	Aeration Basins	0	0	0	0	0	0
8	Aeration Equipment	0	1,100,000	1,200,000	2,298,400	0	4,598,400
9	Corrosion/Odor Control Facilities	108,900	0	98,200	477,700	93,600	778,400
10	Final Clarifiers	0	0	0	4,652,400	0	4,652,400
11	Disinfection	0	0	0	0	0	0
12	Sludge Handling	2,126,300	6,300,000	9,734,400	3,543,300	0	21,704,000
13	General Plant	541,900	208,000	0	0	0	749,900
14	Lab	0	0	0	0	0	0
15	Vehicles	0	0	0	0	0	0
16	Administration & General	0	0	0	0	0	0
17	Land	0	0	0	0	0	0
18	Total	5,418,600	8,473,200	13,517,000	15,970,300	6,398,600	49,777,700

Table 7

City of Grand Island, NE

Wastewater Utility

Capital Improvement Program Financing

Line No.	Description	Year Ending September 30,					Total
		2009	2010	2011	2012	2013	
		\$	\$	\$	\$	\$	\$
Sources of Funds							
1	Beginning of Year Balance	5,247,900	128,300	120,200	196,500	122,400	5,247,900
2	Revenue Bond Proceeds	0	6,800,000	13,500,000	15,800,000	6,500,000	42,600,000
3	Cash Financing of Construction	200,000	2,200,000	1,200,000	1,400,000	400,000	5,400,000
4	Grants/Developer Contributions	0	0	0	0	0	0
5	Interest Income (a)	99,000	61,100	76,600	81,100	58,900	376,700
6	Total Funds Available	5,546,900	9,189,400	14,896,800	17,477,600	7,081,300	53,624,600
Application of Funds							
7	Major Capital Improvements	5,418,600	8,473,200	13,517,000	15,970,300	6,398,600	49,777,700
8	Issuance Costs	0	102,000	202,500	237,000	97,500	639,000
9	Bond Reserve Funds	0	494,000	980,800	1,147,900	472,200	3,094,900
10	Total Application of Funds	5,418,600	9,069,200	14,700,300	17,355,200	6,968,300	53,511,600
11	End of Year Fund Balance	128,300	120,200	196,500	122,400	113,000	113,000
12	Capital Reserve Balance	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	

(a) Includes interest earnings on the capital reserve.

Table 8

City of Grand Island, NE

Wastewater Utility

Comparison of Projected Revenue Under Existing Rates With Projected Revenue Requirements

Line No.	Description	Year Ending September 30,				
		2009	2010	2011	2012	2013
		\$	\$	\$	\$	\$
1	Revenue Under Existing Rates	9,175,700	8,730,500	8,753,600	8,776,600	8,799,700
	Additional Revenue Required					
	Fiscal Year	Revenue Increase	Months Effective			
2	2009	0.0%	3	0	0	0
3	2010	7.0%	12	611,100	614,400	616,000
4	2011	6.0%	12	562,000	563,500	564,900
5	2012	6.0%	12		597,300	598,800
6	2013	6.0%	12			634,800
7	Total Additional Revenue	0	611,100	1,174,800	1,775,200	2,414,500
8	Total Service Charge Revenue	9,175,700	9,341,600	9,928,400	10,551,800	11,214,200
9	Other Operating Revenue	497,300	570,900	572,700	555,000	505,600
10	Interest Income - Operations	12,200	14,400	6,000	5,700	6,100
11	Interest Income - Reserve Funds (a)	118,100	126,600	155,800	199,000	238,200
12	Total Revenue	9,803,300	10,053,500	10,662,900	11,311,500	11,964,100
13	Operation and Maintenance Expense	6,603,000	6,566,300	6,890,600	6,516,000	6,859,300
14	Net Revenue	3,200,300	3,487,200	3,772,300	4,795,500	5,104,800
	Debt Service					
15	Existing Revenue Bonds	1,783,700	1,785,900	1,787,700	1,743,700	1,732,800
16	Proposed Revenue Bonds	0	0	494,000	1,474,800	2,622,700
17	Total Debt Service	1,783,700	1,785,900	2,281,700	3,218,500	4,355,500
18	Routine Capital Additions (b)	246,300	246,300	246,300	246,300	246,300
19	Cash Financing of Major Improvements	200,000	2,200,000	1,200,000	1,400,000	400,000
20	Additions to Operating Reserve	0	71,000	0	0	84,800
21	Net Annual Balance	970,300	(816,000)	44,300	(69,300)	18,200
22	Beginning of Year Balance	0	970,300	154,300	198,600	129,300
23	End of Year Balance	970,300	154,300	198,600	129,300	147,500
24	Operating Reserve Balance	1,628,100	1,699,100	1,699,100	1,699,100	1,783,900

(a) Includes interest earnings on the Principal and Interest Account, Bond Reserve Fund, and operating reserve.

(b) Cash financing of Machinery & Equipment and Vehicles.

Table 9
City of Grand Island, NE
Wastewater Utility
Coverage Requirements

Line		Year Ending September 30,				
No.		2009	2010	2011	2012	2013
		\$	\$	\$	\$	\$
Rate Covenant Coverage						
1	Projected Net Revenues	3,200,300	3,487,200	3,772,300	4,795,500	5,104,800
2	Annual Debt Service	1,783,700	1,785,900	2,281,700	3,218,500	4,355,500
3	Projected Actual Net Revenue as a Percent of Debt Service (a)	1.79 x	1.95 x	1.65 x	1.49 x	1.17 x
Additional Bond Coverage (b)						
4	<u>Preceding Year Projected Net Revenues</u>	5,575,870	3,200,300	3,487,200	3,772,300	4,795,500
5	Average Annual Debt Service	1,717,129	761,503	1,650,078	2,683,658	3,032,836
6	Projected Actual Net Revenue as a Percent of Debt Service (c)	3.25 x	4.20 x	2.11 x	1.41 x	1.58 x
7	Ensuring Year Projected Net Revenues	3,200,300	3,487,200	3,772,300	4,795,500	5,104,800
8	Average Annual Debt Service	1,717,129	761,503	1,650,078	2,683,658	3,032,836
9	Projected Actual Net Revenue as a Percent of Debt Service (d)	1.86 x	4.58 x	2.29 x	1.79 x	1.68 x

(a) The Bond Ordinance requires net revenue to equal or exceed 1.10x actual debt service.

(b) The City shall comply with one or the other of the two additional bonds tests.

(c) The Bond Ordinance requires net revenue to equal or exceed 1.25x actual debt service.

(d) The Bond Ordinance requires net revenue to equal or exceed 1.25x actual debt service in each of the three full fiscal years after the issuance of the proposed Additional Bonds.

Table 10

City of Grand Island, NE

Wastewater Utility

Cost of Service

Test Year 2010

Line No.		Operating Expense	Capital Cost	Total
		\$	\$	\$
Revenue Requirements				
1	Operation & Maintenance Expense	6,566,300		6,566,300
	Debt Service Requirements			
2	Existing Debt Service		1,785,900	1,785,900
3	Proposed Debt Service		0	0
4	Routine Capital Additions		246,300	246,300
5	Cash Financing of Major Improvements		2,200,000	2,200,000
6	Additions to the Operating Reserve	71,000		71,000
7	Total	6,637,300	4,232,200	10,869,500
Revenue Requirements Met from Other Sources				
8	Other Operating Revenue	540,900	30,000	570,900
9	Interest Income	14,400	126,600	141,000
10	Change in Funds Available	498,300	317,700	816,000
11	Total	1,053,600	474,300	1,527,900
12	Net Costs to be Met from Charges	5,583,700	3,757,900	9,341,600

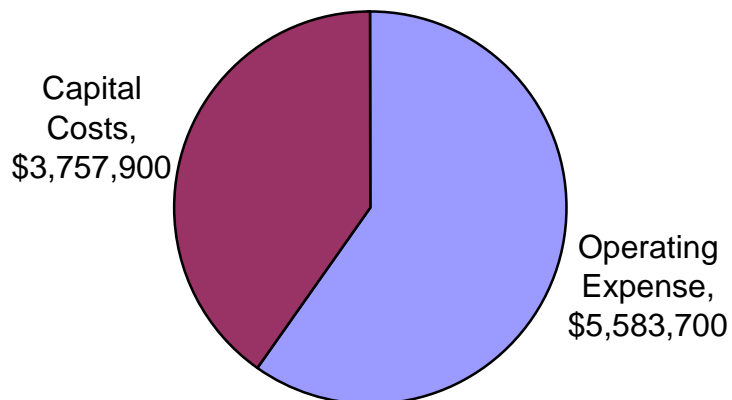


Table 11

City of Grand Island, NE
Wastewater Utility
Allocation of Net Plant Investment
To Functional Cost Components
Test Year 2010

		Common to All						City	
Line No.		Net Plant Investment	Wastewater Strength					Collection System Users Volume	
			Volume	BOD	SS	O&G	NH3		H2S
		\$	\$	\$	\$	\$	\$	\$	\$
1	Sewer Mains	19,627,400							19,627,400
2	Liquid Oxygen	18,500						18,500	
3	Lift Stations	6,500							6,500
	Wastewater Treatment								
4	Raw Water Pumping	0	0						
5	Preliminary Treatment	0	0			0			
6	Primary Sedimentation/Clarifiers	71,800	71,800						
7	Aeration Basins	3,792,200		2,528,100			1,264,100		
8	Aeration Equipment	522,000		261,000			261,000		
9	Corrosion/Odor Control Facilities	53,700						53,700	
10	Final Clarifiers	851,400	212,900	383,100	170,300		85,100		
11	Disinfection	2,280,500	2,280,500						
12	Sludge Handling	8,732,300		3,493,000	3,056,300	436,600	873,200	873,200	
13	General Plant	1,480,400	232,900	605,200	293,000	39,600	225,500	84,200	0
14	Subtotal	17,784,300	2,798,100	7,270,400	3,519,600	476,200	2,708,900	1,011,100	0
15	Lab	13,600		6,600	3,500	1,800	1,200	500	
16	Vehicles	147,700	10,900	28,700	13,900	1,900	10,700	4,100	77,500
17	Administration & General	239,600	18,000	46,500	22,500	3,000	17,300	6,600	125,700
18	Land	561,400	561,400						
19	Total	38,399,000	3,388,400	7,352,200	3,559,500	482,900	2,738,100	1,040,800	19,837,100
20	Existing Debt Service to be Recovered	1,785,900	157,700	341,900	165,500	22,500	127,300	48,400	922,600

Allocation of Net Plant Investment

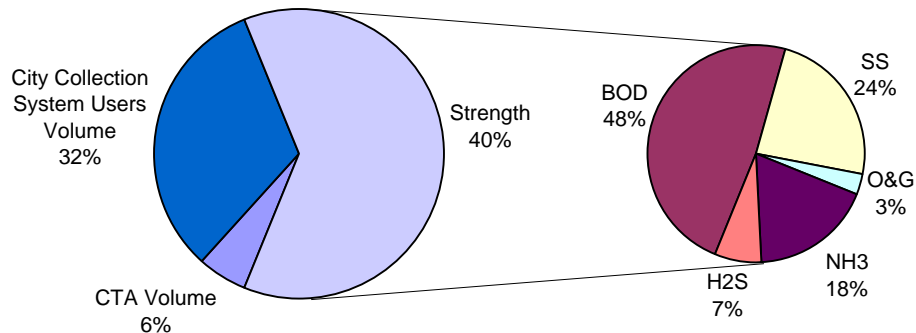


Table 12

City of Grand Island, NE
Wastewater Utility
Allocation of Capital Improvements
To Functional Cost Components
Test Year 2010

Line No.		Net Plant Investment	Common to All						City
			Wastewater Strength						Collection System Users
			Volume	BOD	SS	O&G	NH3	H2S	Volume
		\$	\$	\$	\$	\$	\$	\$	
1	Sewer Mains	5,650,000						5,650,000	
2	Liquid Oxygen	0					0		
3	Lift Stations	4,639,300						4,639,300	
Wastewater Treatment									
4	Raw Water Pumping	0	0						
5	Preliminary Treatment	6,025,200	4,217,600		1,807,600				
6	Primary Sedimentation/Clarifiers	980,100	980,100						
7	Aeration Basins	0		0			0		
8	Aeration Equipment	4,598,400				4,598,400			
9	Corrosion/Odor Control Facilities	778,400					778,400		
10	Final Clarifiers	4,652,400	1,163,100	2,093,600	930,500	465,200			
11	Disinfection	0	0						
12	Sludge Handling	21,704,000		8,681,600	7,596,400	1,085,200	2,170,400	2,170,400	
13	General Plant	749,900	123,100	208,600	165,100	56,000	140,000	57,100	
14	Subtotal	39,488,400	6,483,900	10,983,800	8,692,000	2,948,800	7,374,000	3,005,900	
15	Lab	0		0	0	0	0	0	
16	Vehicles	0	0	0	0	0	0	0	
17	Administration & General	0	0	0	0	0	0	0	
18	Land	0	0						
19	Total	49,777,700	6,483,900	10,983,800	8,692,000	2,948,800	7,374,000	3,005,900	
20	Capital Charges to be Recovered (a)	1,972,000	257,000	435,100	344,300	116,800	292,100	119,100	
								407,600	

(a) Excludes debt service on existing bonds.

Allocation of Capital Improvements

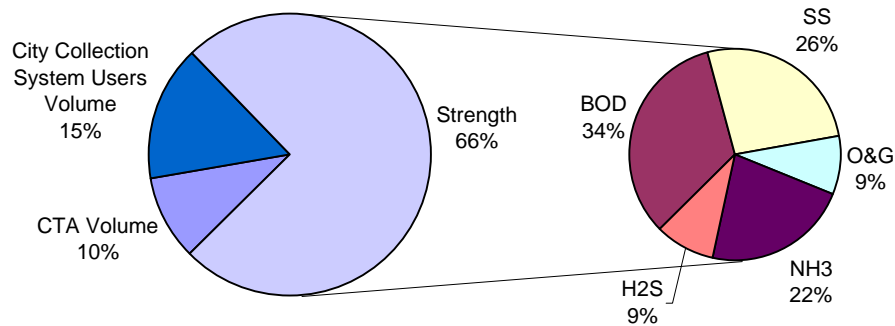


Table 13
City of Grand Island, NE
Wastewater Utility
Allocation of Operation & Maintenance Expense
To Functional Cost Components
Test Year 2010

		Common to All							City
Line No.		Operating Expenses	Wastewater Strength					Billing	Collection System Users Volume
	Volume		BOD	SS	O&G	NH3	H2S		
		\$	\$	\$	\$	\$	\$	\$	\$
1	Collection Service	869,900							869,900
2	Liquid Oxygen	119,200					119,200		
	Wastewater Treatment								
3	Raw Water Pumping	261,300	261,300						
4	Preliminary Treatment	189,700	132,800		56,900				
5	Primary Sedimentation/Clarifiers	112,100	112,100						
6	Aeration Basins	70,300		46,900			23,400		
7	Aeration Equipment	613,700		306,800			306,900		
8	Corrosion/Odor Control Facilities	261,600					261,600		
9	Final Clarifiers	67,800	16,900	30,500	13,600		6,800		
10	Disinfection	168,100	168,100						
11	Sludge Handling	423,600		169,300	148,300	21,200	42,400	42,400	
12	General Plant	185,300	29,100	75,800	36,700	5,000	28,200	10,500	
13	Subtotal	2,353,500	720,300	629,300	198,600	83,100	407,700	314,500	0
14	Lab	51,600		24,800	13,400	6,700	4,600	2,100	
15	Compost Operations	1,976,900		1,284,800	692,100				
16	Land Application	0		0	0				
17	Solids Handling	0		0	0	0	0	0	
18	General Operations	1,195,200	129,600	407,100	199,600	16,500	58,300	58,000	118,800
19	Additions to the Operating Reserve	71,000	8,500	26,900	13,200	1,100	3,800	3,800	13,700
20	Total O&M Expense	6,637,300	858,400	2,372,900	1,116,900	107,400	474,400	497,600	118,800
	Less Offsetting Revenues								
21	Other Operating Revenue	540,900	234,100	87,100	47,200	23,600	16,300	7,200	0
22	Interest Income	14,400	1,900	5,100	2,400	200	1,000	1,100	300
23	Change in Funds Available	498,300	64,400	178,100	83,900	8,100	35,600	37,400	8,900
24	Total Offsetting Revenues	1,053,600	300,400	270,300	133,500	31,900	52,900	45,700	9,200
25	Net Operating Expenses to be Recovered	5,583,700	558,000	2,102,600	983,400	75,500	421,500	451,900	109,600

Allocation of Net Operating Expenses

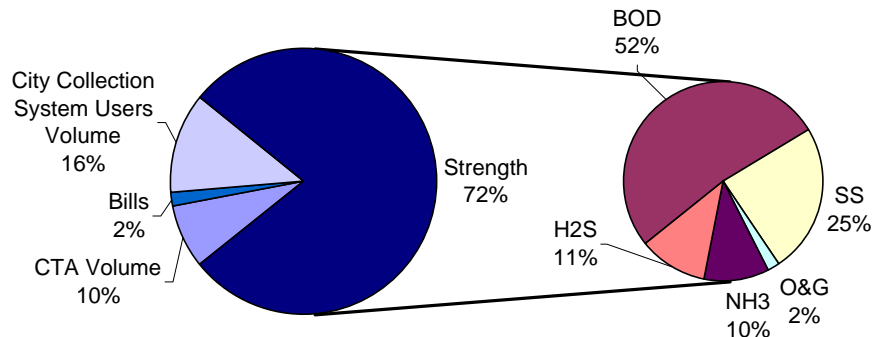


Table 14
City of Grand Island, NE
Wastewater Utility
Units of Service
Test Year 2010

Line No.		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Wastewater Volume			Wastewater Strength					Customers Bills
		Contributed Volume	Infiltration /Inflow	Total	BOD	Suspended Solids	Oil & Grease	NH3	H2S	
		Ccf	Ccf	Ccf (1) + (2)	Pounds	Pounds	Pounds	Pounds	Pounds	
1	Residential	1,062,300	1,962,300	3,024,600	2,070,000	2,715,200	448,700	221,800	0	150,649
2	Residential - Suburb	4,200	7,100	11,300	8,000	10,300	1,700	800	0	532
3	Residential - Commercial	230,200	161,600	391,800	366,300	423,900	72,500	31,600	0	6,753
	Interdepartmental - Commercial									
4	JB Swift	1,525,200	23,300	1,548,500	2,100,500	2,155,300	382,700	144,200	0	12
5	All Other	891,100	590,800	1,481,900	1,407,300	1,619,400	277,700	120,300	0	22,725
6	Commercial - Suburb	1,600	1,100	2,700	2,500	2,900	500	200	0	48
	Surcharge									
7	JB Swift				3,331,000	951,700	190,300	999,300	1,427,600	
8	All Other				1,011,500	326,500	92,100	0	0	
9	Total	3,714,600	2,746,200	6,460,800	10,297,100	8,205,200	1,466,200	1,518,200	1,427,600	180,719

Ccf = Hundred Cubic Feet

Table 15
City of Grand Island, NE
Wastewater Utility
Unit Costs of Service
Test Year 2010

Line No.		Common to All							City Collection System Users	
		Total	Volume	Wastewater Strength				Billing	Volume	
				BOD	SS	O&G	NH3			H2S
				Ccf	Pounds	Pounds	Pounds			Pounds
Units of Service										
1	City Collection System Users		4,912,300	4,865,600	5,098,200	893,200	374,700	0	180,707	4,912,300
2	JB Swift		1,548,500	5,431,500	3,107,000	573,000	1,143,500	1,427,600	12	80,800
3	Total		6,460,800	10,297,100	8,205,200	1,466,200	1,518,200	1,427,600	180,719	4,993,100
Costs of Service										
Net Operating Expense										
4	Total Cost - \$	5,583,700	558,000	2,102,600	983,400	75,500	421,500	451,900	109,600	881,200
5	Unit Cost - \$/unit		0.08637	0.20419	0.11985	0.05149	0.27763	0.31655	0.60647	0.17648
Existing Capital Costs										
6	Total Cost - \$	1,785,900	157,700	341,900	165,500	22,500	127,300	48,400		922,600
7	Unit Cost - \$/unit		0.02441	0.03320	0.02017	0.01535	0.08385	0.03390	0.00000	0.18477
Proposed Capital Costs										
8	Total Cost - \$	1,972,000	257,000	435,100	344,300	116,800	292,100	119,100		407,600
9	Unit Cost - \$/unit		0.03978	0.04225	0.04196	0.07966	0.19240	0.08343	0.00000	0.08163
10	Total Unit Cost of Service		0.15055	0.27965	0.18198	0.14650	0.55388	0.43388	0.60647	0.44289
Total Cost of Service										
11	City Collection System Users	5,651,700	739,600	1,360,700	927,800	130,900	207,500	0	109,600	2,175,600
12	JB Swift	3,689,900	233,100	1,518,900	565,400	83,900	633,400	619,400	0	35,800
13	Total	9,341,600	972,700	2,879,600	1,493,200	214,800	840,900	619,400	109,600	2,211,400

Ccf = Hundred Cubic Feet

Table 16
City of Grand Island, NE
Wastewater Utility
Allocated Costs of Service to Customer Classes
Test Year 2010

Line No.		Common to All							City	
		Total	Volume	Wastewater Strength					Collection System Users	
				BOD	SS	O&G	NH3	H2S	Billing	Volume
			Ccf	Pounds	Pounds	Pounds	Pounds	Pounds	Bills	Ccf
1	Unit Cost of Service - \$/unit		0.15055	0.27965	0.18198	0.14650	0.55388	0.43388	0.60647	0.44289
	Residential									
2	Units of Service		3,024,600	2,070,000	2,715,200	448,700	221,800		150,649	3,024,600
3	Allocated Cost - \$	3,148,200	455,300	578,900	494,200	65,800	123,000		91,400	1,339,600
	Residential - Suburb									
4	Units of Service		11,300	8,000	10,300	1,700	800		532	11,300
5	Allocated Cost - \$	11,700	1,700	2,200	1,900	200	400		300	5,000
	Residential - Commercial									
6	Units of Service		391,800	366,300	423,900	72,500	31,600		6,753	391,800
7	Allocated Cost - \$	444,200	59,000	102,400	77,100	10,600	17,500		4,100	173,500
	Interdepartmental - Commercial									
	JB Swift									
8	Units of Service		1,548,500	2,100,500	2,155,300	382,700	144,200		12	80,800
9	Allocated Cost - \$	1,384,400	233,200	587,400	392,200	56,000	79,800		0	35,800
	All Other									
10	Units of Service		1,481,900	1,407,300	1,619,400	277,700	120,300		22,725	1,481,900
11	Allocated Cost - \$	1,688,800	223,100	393,600	294,700	40,700	66,600		13,800	656,300
	Commercial - Suburb									
12	Units of Service		2,700	2,500	2,900	500	200		48	2,700
13	Allocated Cost - \$	3,000	400	700	500	100	100		0	1,200
	Surcharge									
	JB Swift									
14	Units of Service		0	3,331,000	951,700	190,300	999,300	1,427,600	0	
15	Allocated Cost - \$	2,305,500	0	931,500	173,200	27,900	553,500	619,400	0	0
	All Other									
16	Units of Service		0	1,011,500	326,500	92,100	0	0	0	0
17	Allocated Cost - \$	355,800	0	282,900	59,400	13,500	0	0	0	0
18	Total System	9,341,600	972,700	2,879,600	1,493,200	214,800	840,900	619,400	109,600	2,211,400

Table 17

City of Grand Island, NE

Wastewater Utility

Comparison of Allocated Cost of Service

with Revenue Under Existing Rates

Test Year 2010

Line No.		(1)	(2)	(3)
		Allocated Cost of Service	Revenue Under Existing Rates	Indicated Revenue Adjustment
		\$	\$	(1) / (2) - 1
1	Residential	3,148,200	2,696,700	16.7%
2	Residential - Suburb	11,700	10,200	14.7%
3	Residential - Commercial	444,200	371,000	19.7%
	Interdepartmental - Commercial			
4	JB Swift	1,384,400	2,089,600	-33.7%
5	All Other	1,688,800	1,408,000	19.9%
6	Commercial - Suburb	3,000	2,700	11.1%
7	Surcharge	2,661,300	2,152,300	23.6%
8	Total	9,341,600	8,730,500	7.0%

Table 18
City of Grand Island, NE
Wastewater Utility
Proposed Rates

Charges to be Effective October 1,					
	2009	2010	2011	2012	2013
Sewer Service Charge - \$/month					
All Customers	8.24	8.24	8.24	8.24	8.24
Volume Charge - \$/Ccf					
Low Strength Industrial Dischargers	0.42	0.58	0.77	0.93	1.13
JB Swift (a)	1.37	1.29	1.20	1.11	1.02
All Other Customers	1.37	1.45	1.68	1.88	2.13
Excess Strength Surcharge - \$/lb					
BOD over 250 mg/l	0.2806	0.2797	0.3042	0.3143	0.3385
Suspended Solids over 250 mg/l	0.2180	0.2180	0.2180	0.2180	0.2180
Oil & Grease over 100 mg/l	0.0115	0.1465	0.1465	0.1944	0.2050
Low Strength Industrial Dischargers					
BOD over 0 mg/l	0.2806	0.2797	0.3042	0.3143	0.3385
Suspended Solids over 0 mg/l	0.2180	0.2180	0.2180	0.2180	0.2180
Oil & Grease over 0 mg/l	0.0115	0.1465	0.1465	0.1944	0.2050
Ammonia over 30 mg/l	0.3729	0.5539	0.5701	0.6914	0.7256
Hydrogen Sulfide over 0 mg/l	0.1252	0.3569	0.3899	0.4558	0.4868
Hydrogen Sulfide Flat Fee - \$/month	8,376.29	9,160.00	9,160.00	9,160.00	9,160.00

(a) Applicable to flow discharged from JBS' pretreatment lagoons through their sewer main connecting to the City's wastewater treatment plant.

Ccf = Hundred Cubic Feet

BOD = Biochemical Oxygen Demand

mg/l = milligram per liter

Table 19
City of Grand Island, NE
Wastewater Utility
Comparison of Revenue Under Proposed
Rates with Allocated Cost of Service
Test Year 2010

Line No.		(1) Revenue Under Proposed Rates \$	(2) Allocated Cost of Service \$	(3) Revenue As A Percent of Cost of Service (1) / (2)	(4) Revenue Under Existing Rates \$	(5) Indicated Revenue Adjustment (1) / (4)
1	Residential	2,781,700	3,148,200	88.4%	2,696,700	3.2%
2	Residential - Suburb	10,500	11,700	89.7%	10,200	2.9%
3	Residential - Commercial	389,400	444,200	87.7%	371,000	5.0%
4	Interdepartmental - Commercial	3,456,100	3,073,200	112.5%	3,497,600	-1.2%
5	Commercial - Suburb	2,700	3,000	90.0%	2,700	0.0%
6	Surcharge	2,707,600	2,661,300	101.7%	2,152,300	25.8%
7	Total	9,348,000	9,341,600	100.1%	8,730,500	7.1%

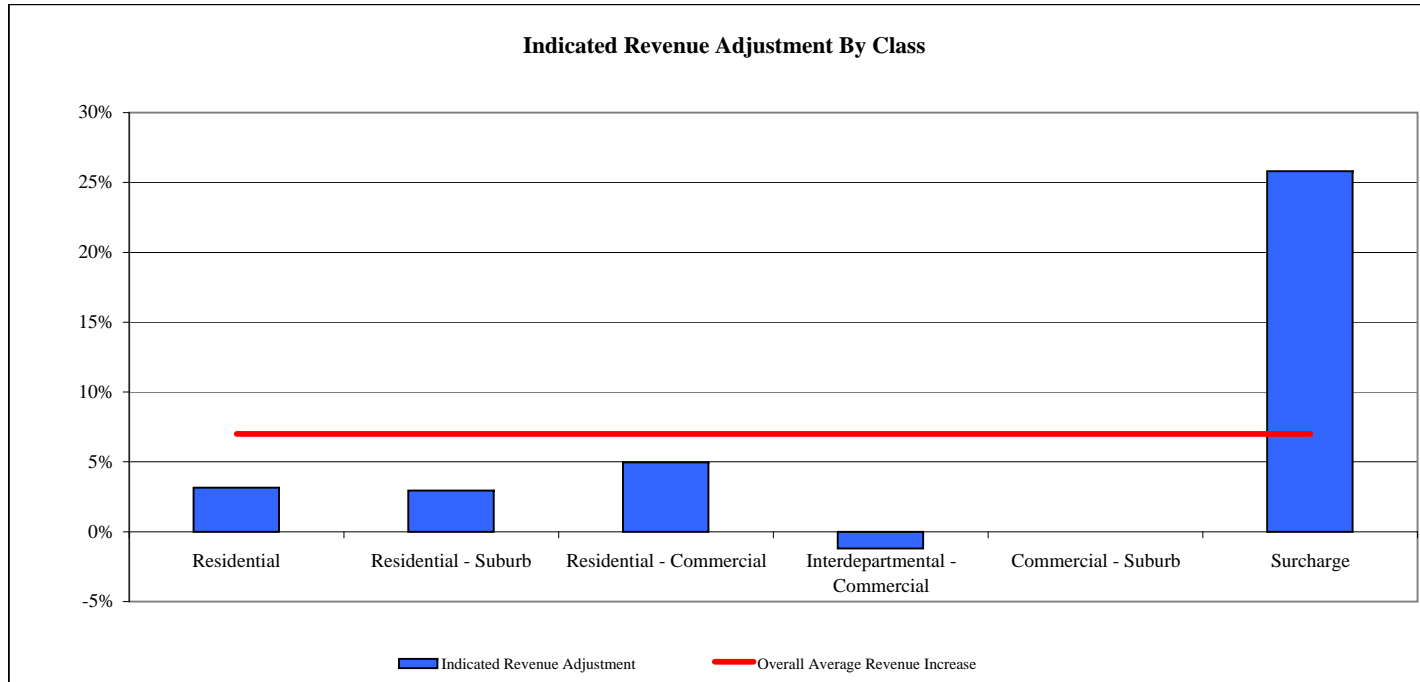
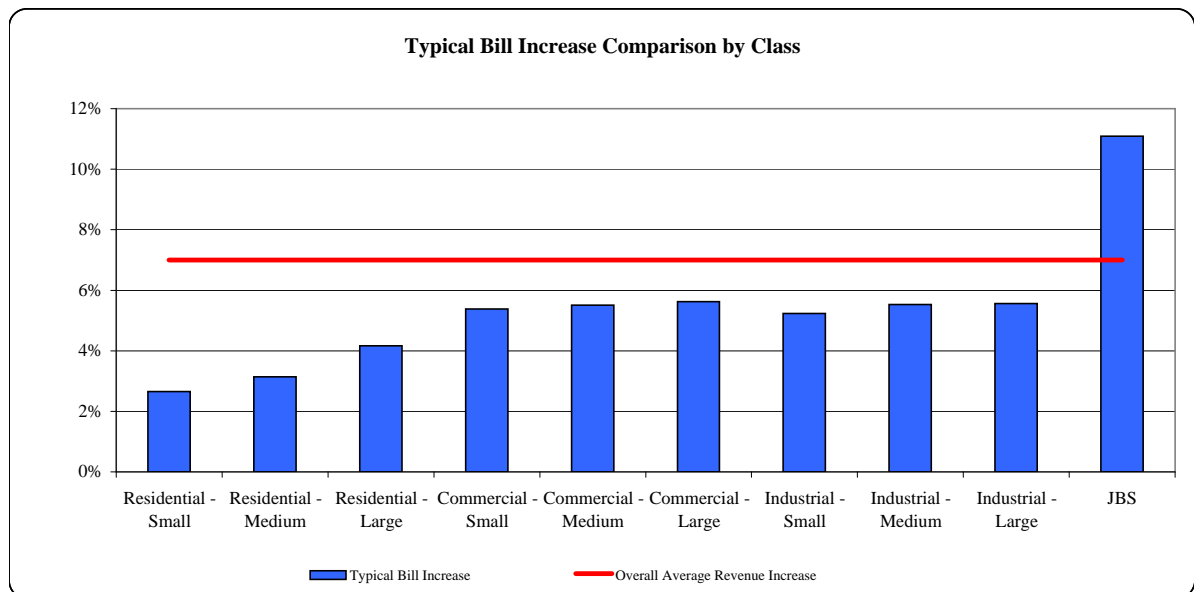


Table 20
City of Grand Island, NE
Wastewater Utility
Typical Bills
Test Year 2010

Line No.	Customer Class	Billed Wastewater Volume	Existing Rates	Typical Wastewater Bills (a)				
		Ccf	\$	2009	2010	2011	2012	2013
				\$	\$	\$	\$	\$
1	Residential Small	5	15.09	15.09	15.49	16.64	17.64	18.89
				0.0%	2.7%	7.4%	6.0%	7.1%
2	Medium	7	17.83	17.83	18.39	20.00	21.40	23.15
				0.0%	3.1%	8.8%	7.0%	8.2%
3	Large	15	28.79	28.79	29.99	33.44	36.44	40.19
				0.0%	4.2%	11.5%	9.0%	10.3%
4	Commercial Small	70	104.14	104.14	109.74	125.84	139.84	157.34
				0.0%	5.4%	14.7%	11.1%	12.5%
5	Medium	100	145.24	145.24	153.24	176.24	196.24	221.24
				0.0%	5.5%	15.0%	11.3%	12.7%
6	Large	160	227.44	227.44	240.24	277.04	309.04	349.04
				0.0%	5.6%	15.3%	11.6%	12.9%
7	Industrial (b) Small	50	141.22	141.22	148.62	163.94	176.77	193.32
				0.0%	5.2%	10.3%	7.8%	9.4%
8	Medium	500	1,338.04	1,338.04	1,412.01	1,565.23	1,693.54	1,859.07
				0.0%	5.5%	10.9%	8.2%	9.8%
9	Large	5,000	13,306.22	13,306.22	14,045.99	15,578.19	16,861.28	18,516.58
				0.0%	5.6%	10.9%	8.2%	9.8%
10	JB Swift (c)	127,100	323,822.44	323,822.44	359,734.97	361,907.77	373,365.39	376,980.09
				0.0%	11.1%	0.6%	3.2%	1.0%

- (a) Percentage increase shown reflects change from previous year.
(b) Assumes biochemical oxygen demand excess strength of 500 mg/l, suspended solids excess strength of 300 mg/l, oil and grease excess strength of 84 mg/l.
(c) Assumes biochemical oxygen demand excess strength of 350 mg/l, suspended solids excess strength of 100 mg/l, oil and grease excess strength of 20 mg/l, ammonia excess strength of 105 mg/l, and hydrogen sulfide strength of 150 mg/l.



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GRAND



ISLAND

Digestion Project and Cost of Service and Rate Design Study Session

May 5, 2009



OLSSON ASSOCIATES
ENGINEERS • PLANNERS • SCIENTISTS • SURVEYORS

Overview

- Purpose of Study Session
- Digestion Project Update, Options, and Costs
- Review Cost Of Service Based Rate Study Model Development and Results

Purpose of Study Session

- Project background and JBS Update
- Explain options and costs for the Digester project
- Explain the concepts and procedures involved in a Cost of Service based Rate Study
- Discuss special issues or concerns
- Answer questions
- Gain City Council's understanding of proposed rate increases to proceed with digester project

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Project Background and JBS Update

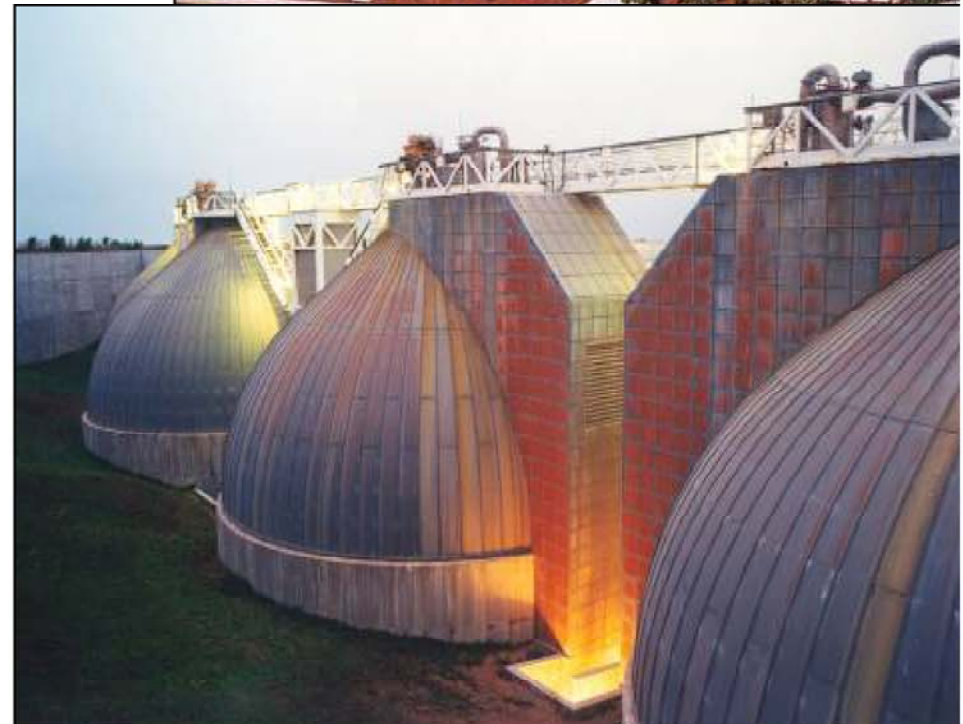
Steve Riehle

Digestion Project Background

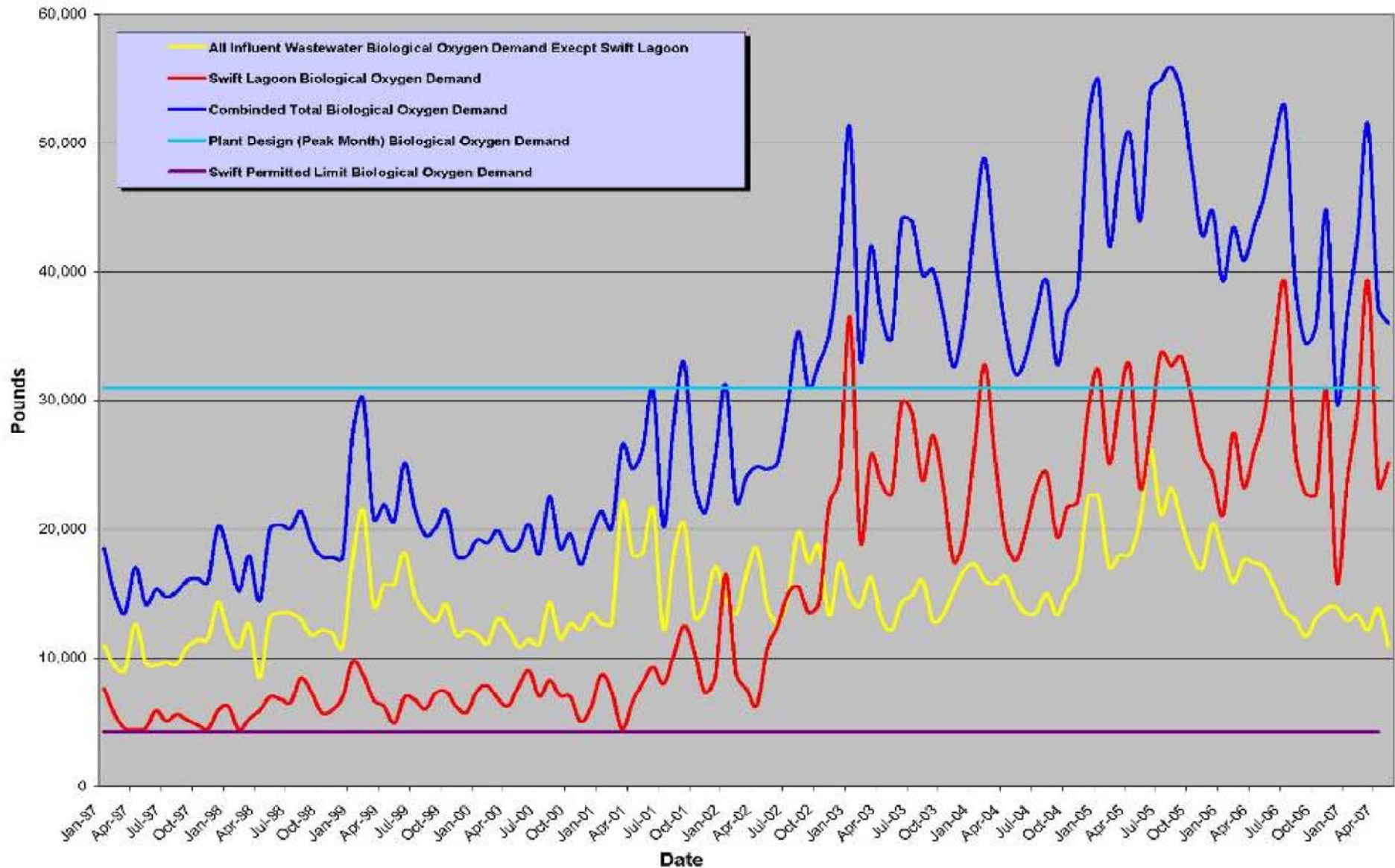
- April 8, 2008 City Council Study Session
 - Costs and benefits of digestion
 - Construction estimated at \$10.7M in 2006
 - Discussed sizing for 20-years of City growth less JBS as a downsized digestion option
 - New JBS Lagoon under construction
 - Proceed with RFP for consulting engineering services for digester project

Anaerobic Digestion Advantages (from 4/8/08)

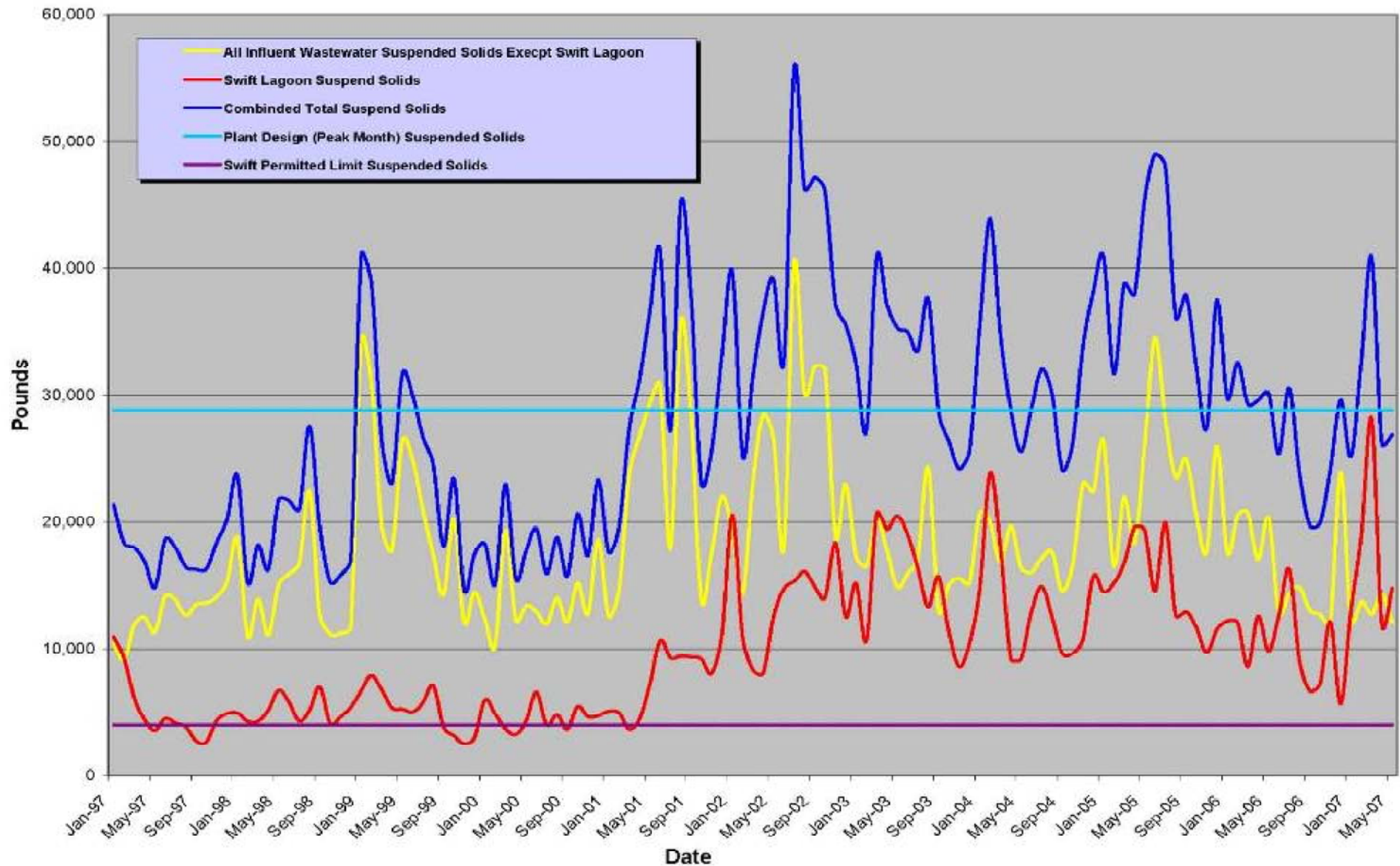
- Reliable and consistent process – widely used with successful track record
- Lowest O&M costs
- Major reduction in solids
- Pathogen reduction (Class B) allows immediate land application
- Improved de-watering ability of solids
- Enclosed to control odors
- Potential beneficial use of digester gas



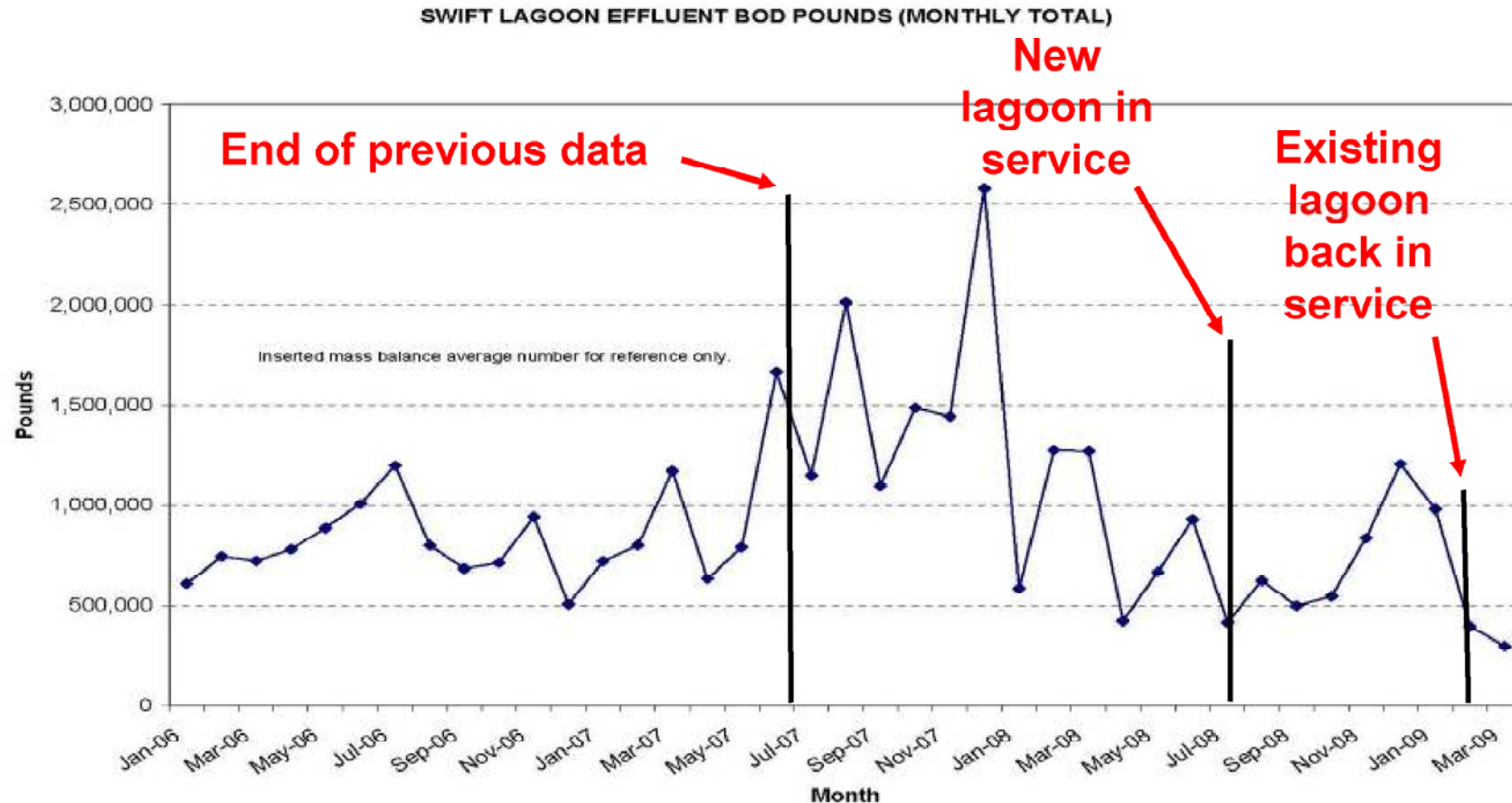
City of Grand Island NE Wastewater Treatment Plant
Biological Oxygen Demand Average Monthly Pounds per Day



City of Grand Island NE Wastewater Treatment Plant
Suspended Solids Average Monthly Pounds per Day



JBS Lagoon Effluent BOD (lbs/month)

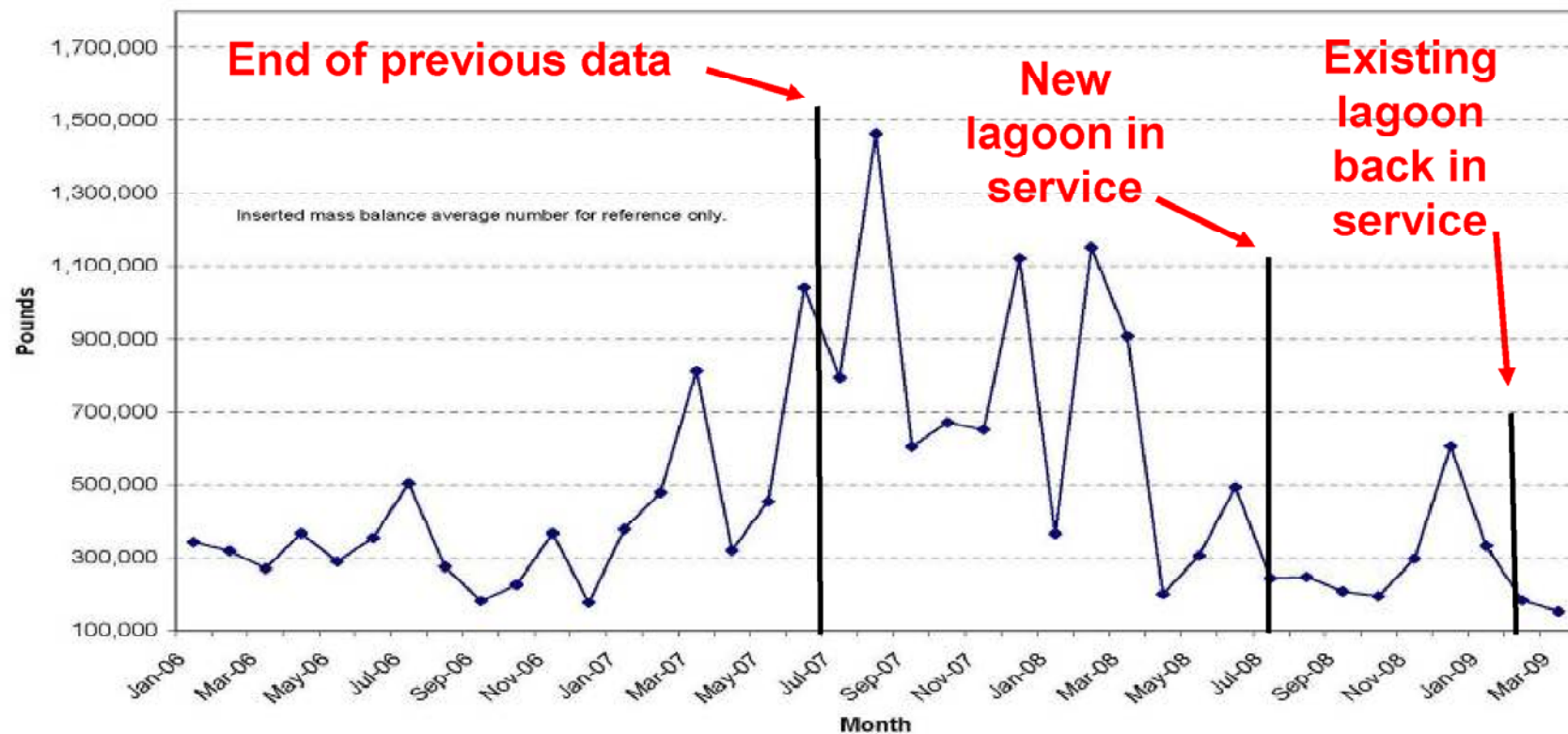


Created by:
City of Grand Island WWTP

09 APRIL 2009

JBS Lagoon Effluent TSS (lbs/month)

SWIFT LAGOON EFFLUENT SUSPENDED SOLIDS POUNDS (MONTHLY TOTAL)



Created by:
City of Grand Island WWTP

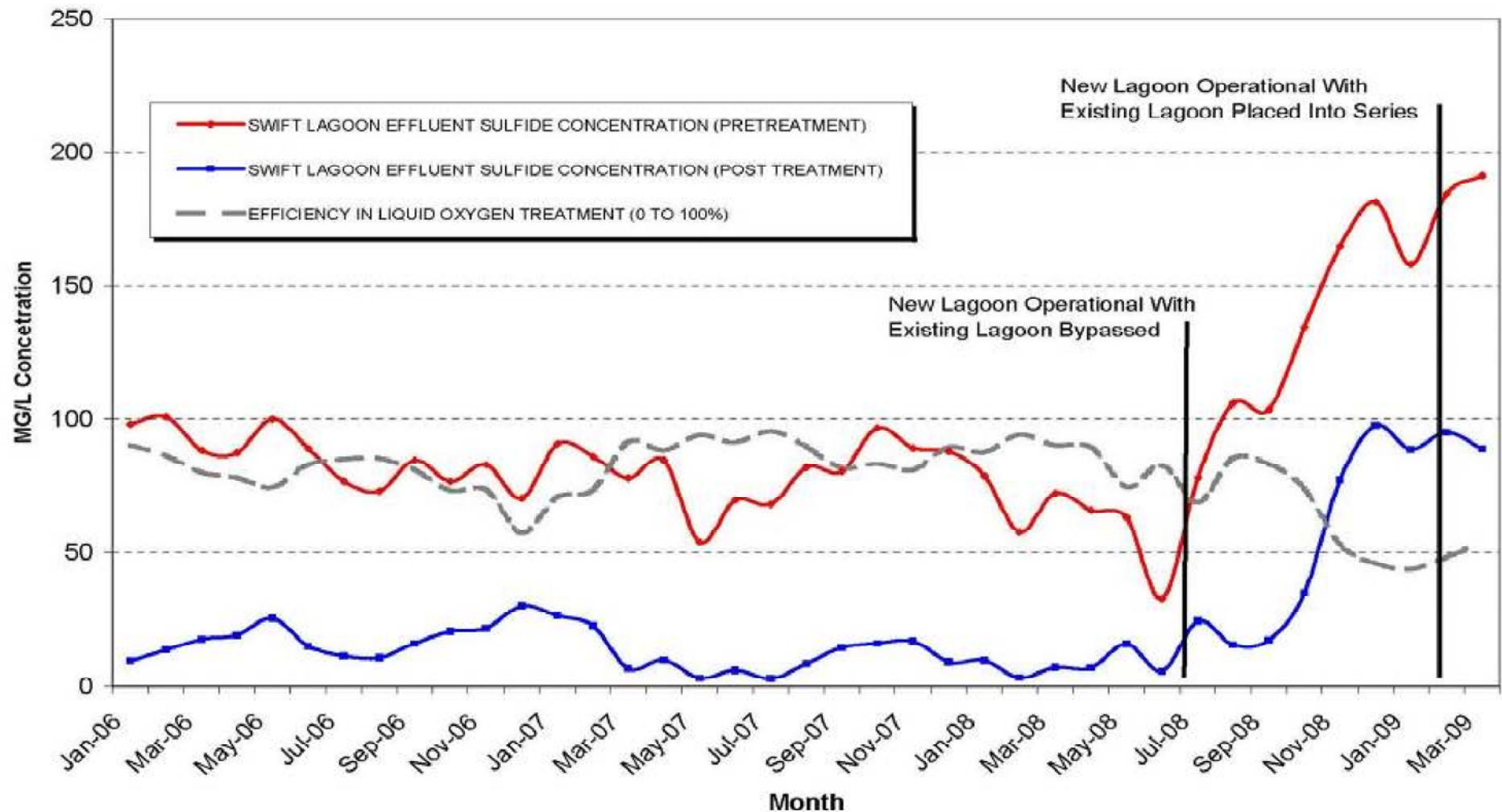
09 APRIL 2009

Other JBS Concerns

- Ammonia
 - Insufficient aeration capacity to treat ammonia in the summer
 - Insufficient final clarifier capacity to treat ammonia in the winter
- Sulfides – Odors and solids production associated w/ treatment process

Influent JBS Sulfide Trend

SWIFT LAGOON EFFLUENT SULFIDE CONCENTRATION (Monthly Average)



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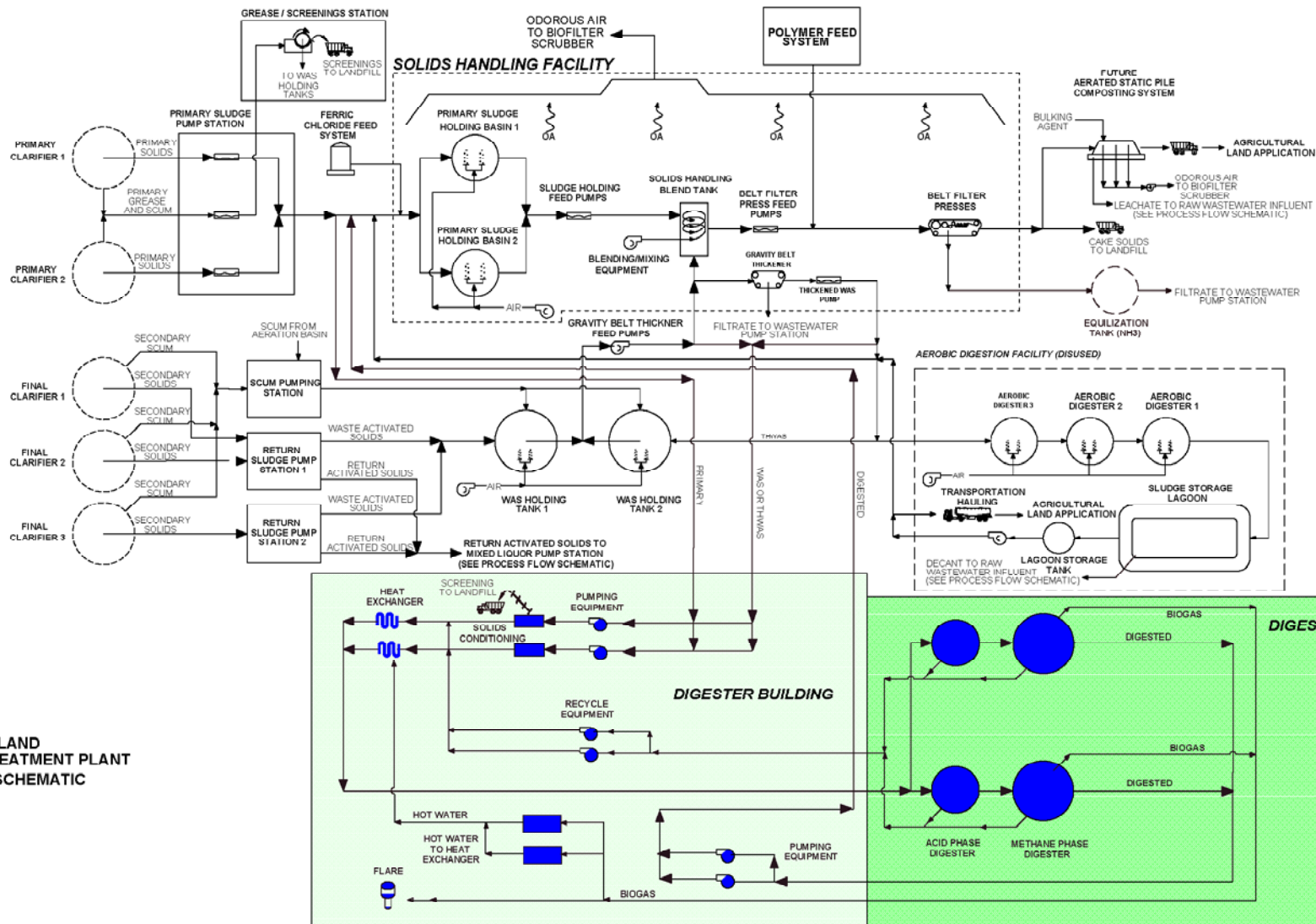
Digestion Project Update

Derek Cambridge

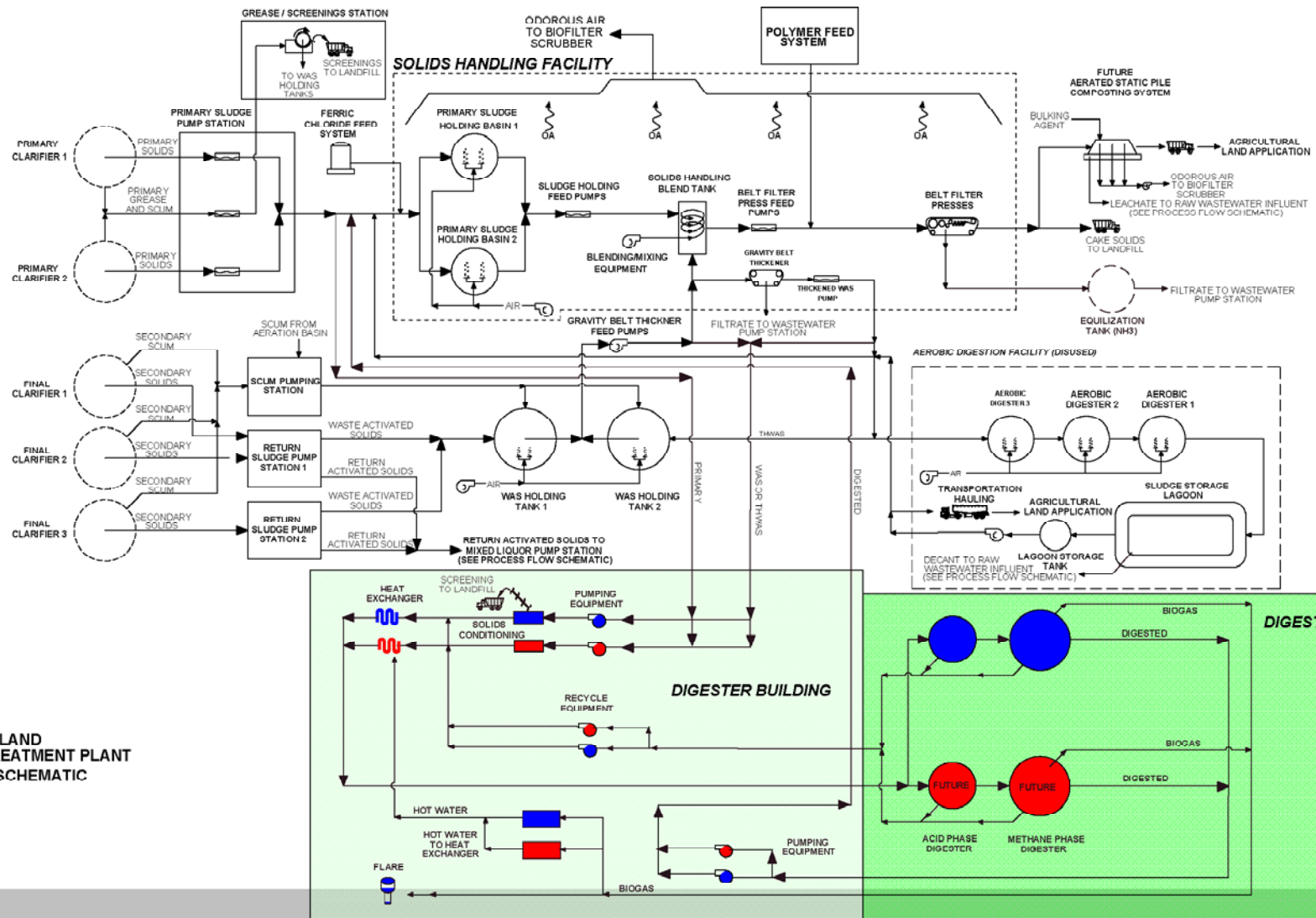
Digestion Project Update

- Six options and costs developed.
- Focused on capacity of the existing liquid treatment process based on Capacity Analysis.
- Reviewed w/ City staff in November Workshop.
- Digester project on-hold following November Workshop until rate study approved.

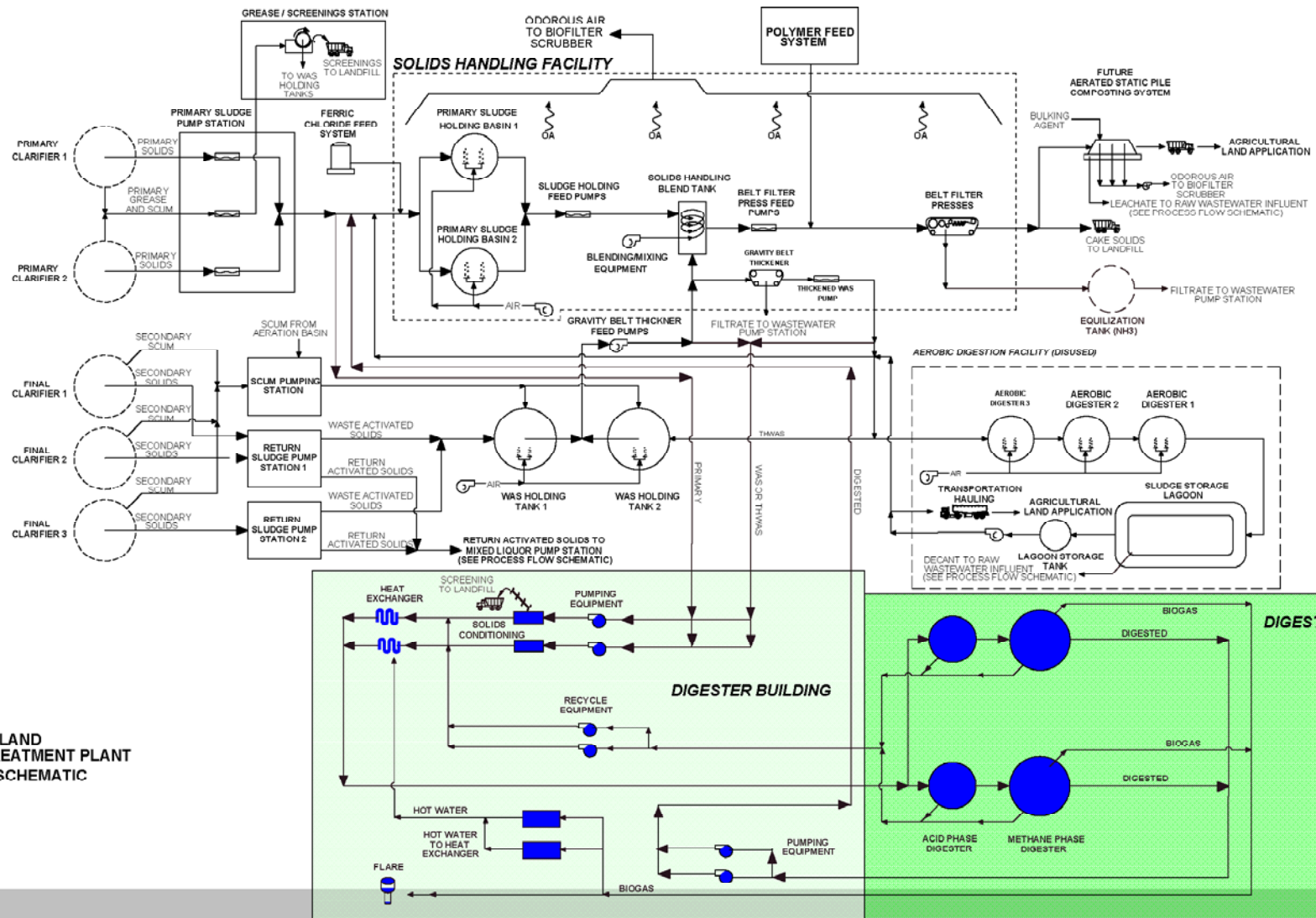
Option 1 – Historic Peak 15 Day Running Average



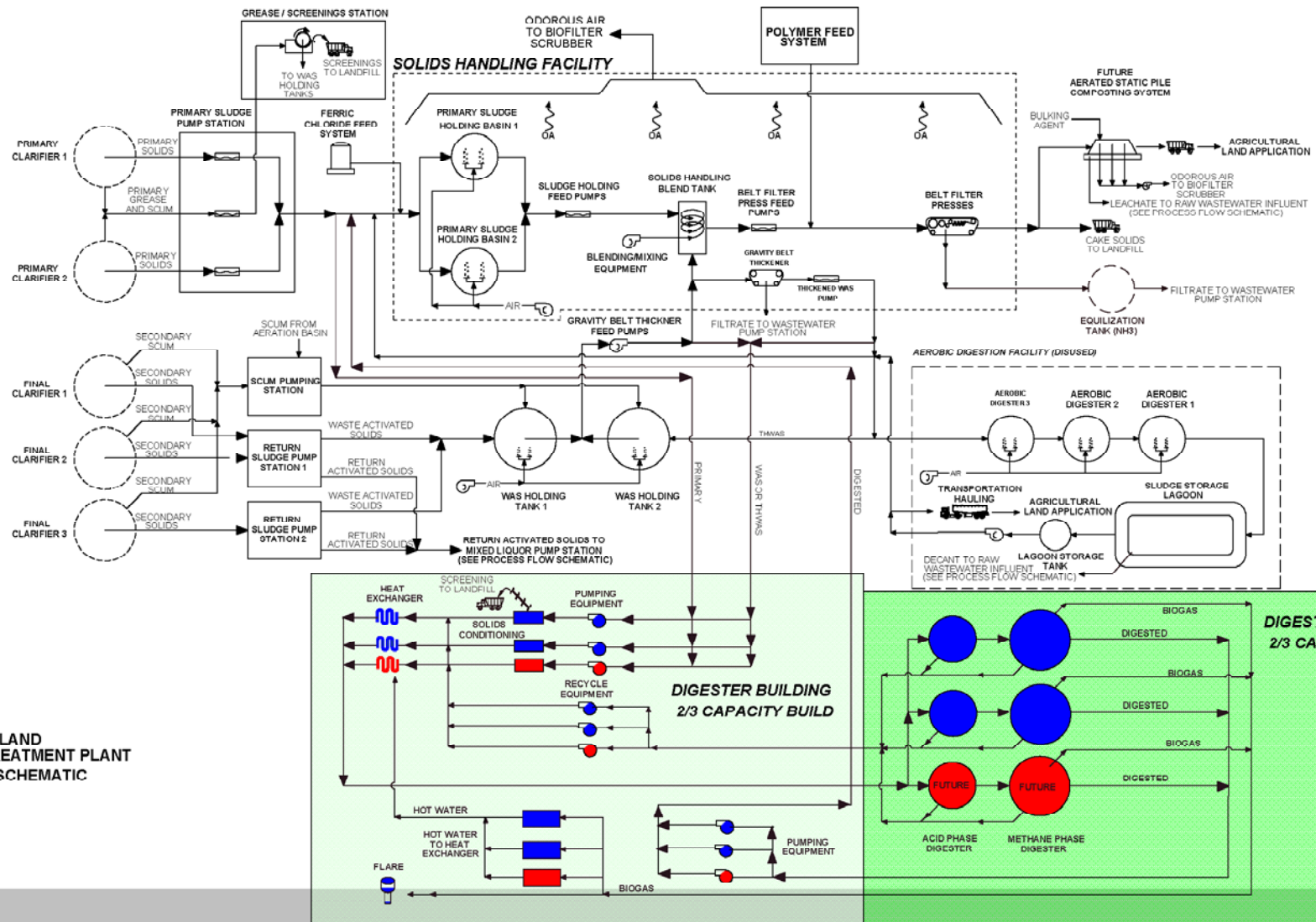
Option 2 – Match Plant Liquid Treatment Capacity



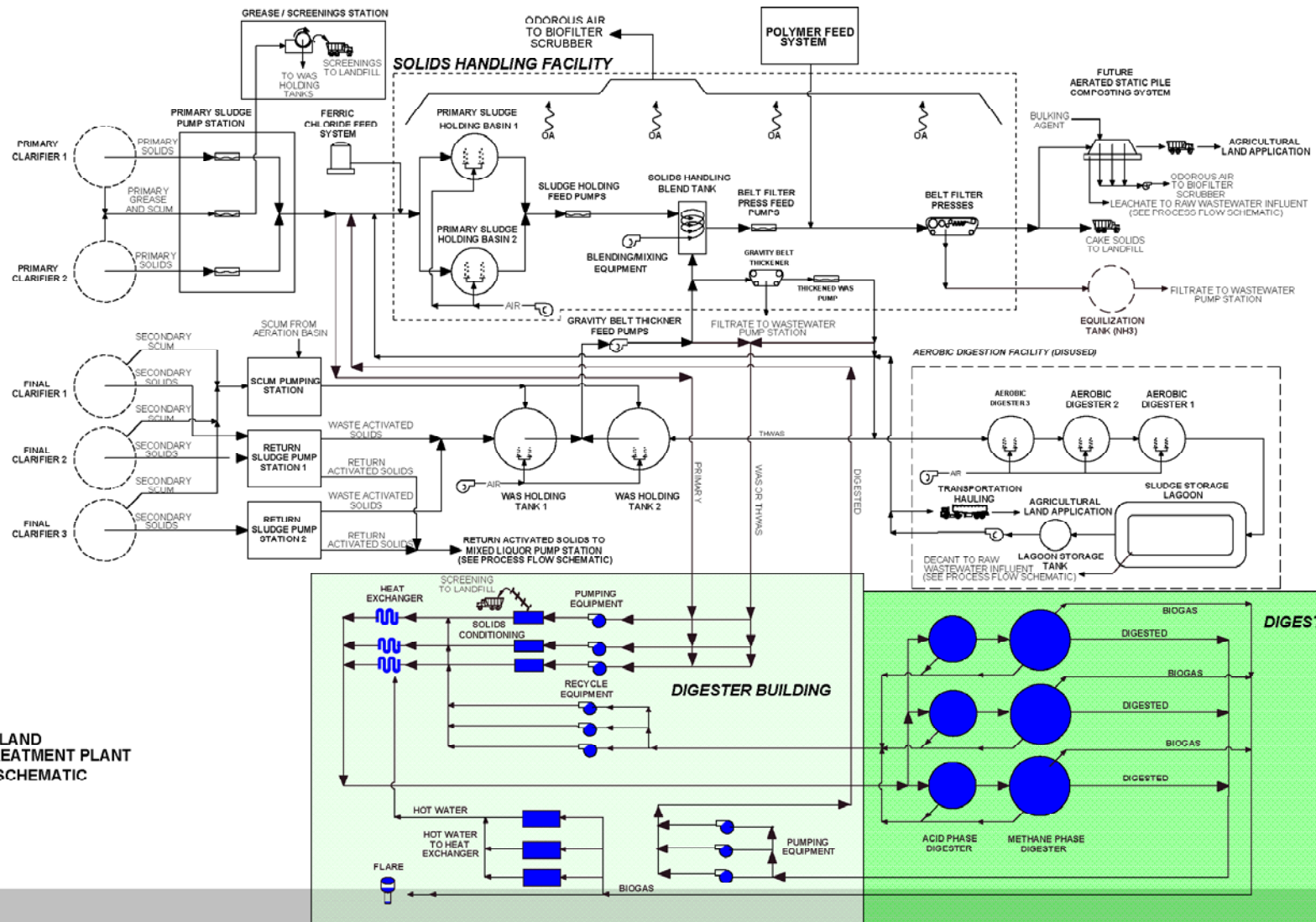
Option 2A – Twice Current Plant Capacity



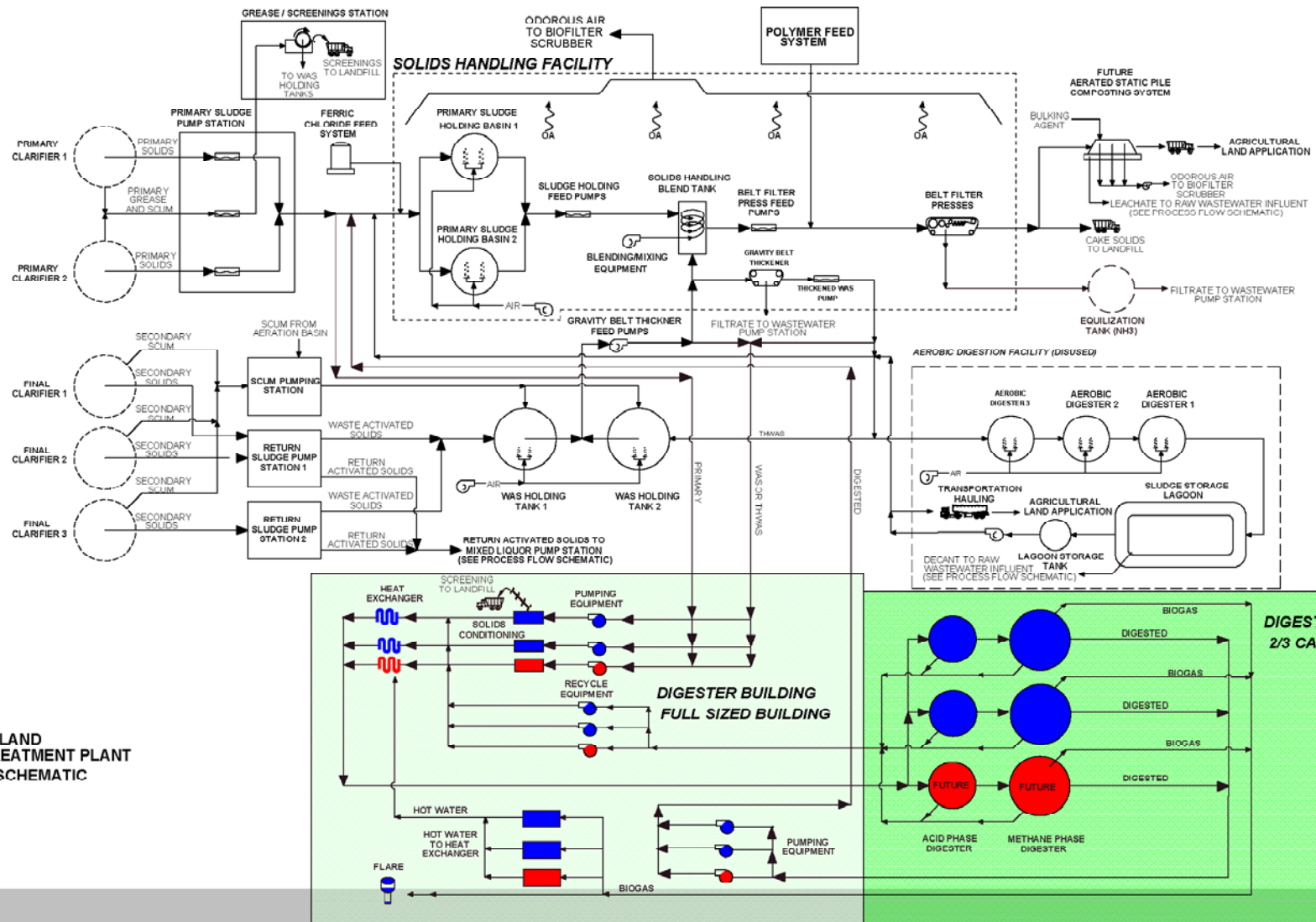
Option 3 – 133% of Current Plant Capacity



Option 3A – Twice Plant Capacity



Option 3B – Option 3 w/ Full Sized Building



Summary of Options

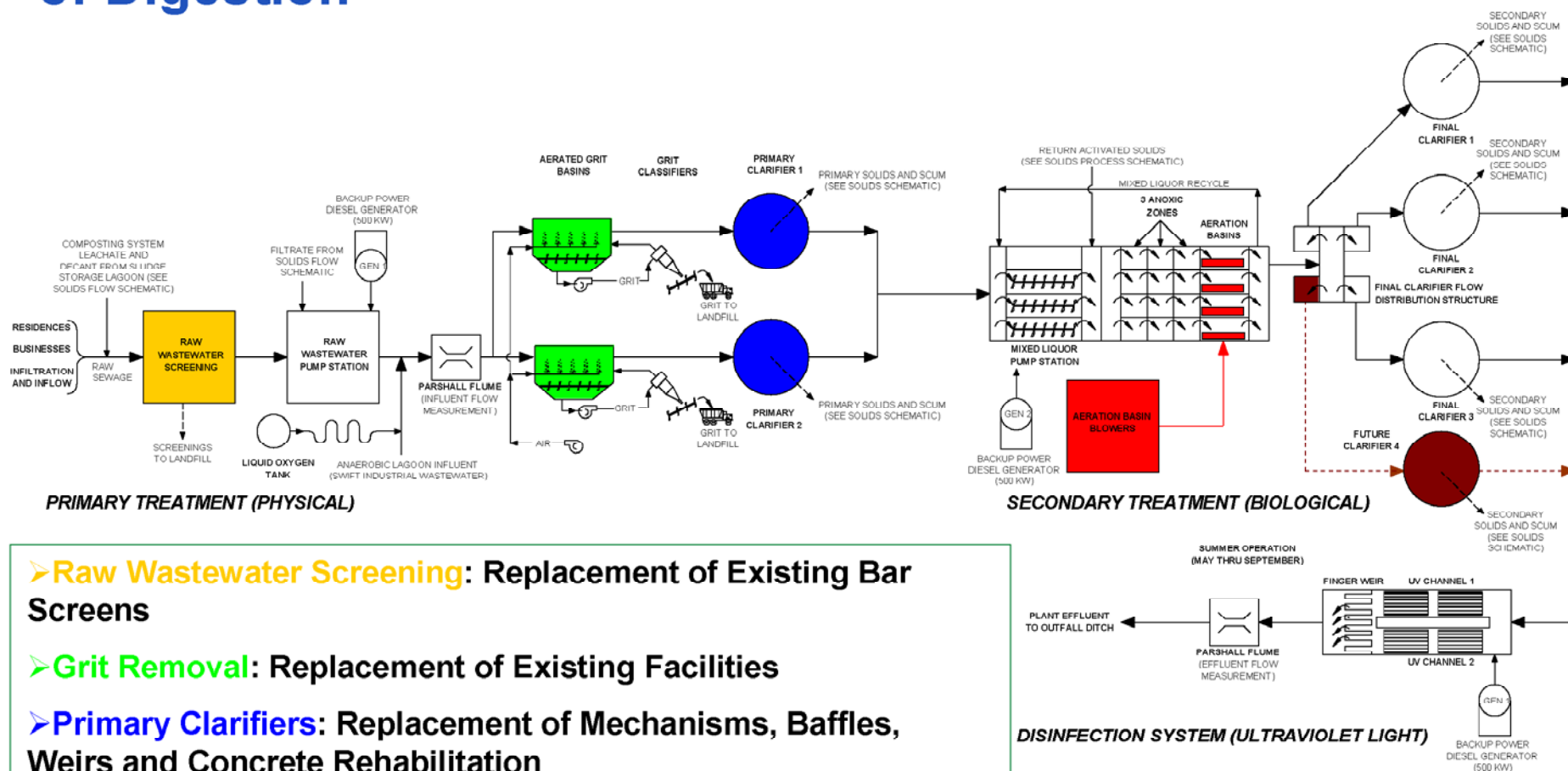
Option	BOD (ppd)	TSS (ppd)	Acid Digesters # - dia, ft x ht, ft	Gas Digesters # - dia, ft x ht, ft	Digester Building Area, sqft
1	67,488	53,382	2 – 22' x 40'	2 – 70' x 36'	12,000
2	54,358	37,830	1 – 27' x 40'	1 – 85' x 36'	8,000
2A	108,716	75,660	2 – 27' x 40'	2 – 85' x 36'	12,000
3	72,477	50,440	2 – 22' x 40'	2 – 70' x 36'	12,000
3A	108,716	75,660	3 – 22' x 40'	3 – 70' x 36'	15,000
3B	72,477	50,440	2 – 22' x 40'	2 – 70' x 36'	15,000

- Capacity ranking, $2 < 1 = 3 = 3B < 2A = 3A$

Conceptual Total Project Cost Summary

Option	Total Project Cost	Comments
2	\$12.9M	No redundancy. Matches capacity of existing plant. Additional digester capacity required w/ any liquid treatment expansion project.
1	\$17.7M	Provides redundancy. Capacity for 33% increase in liquid treatment capacity above existing capacity.
3	\$17.7M	Same as Option 1 except set up for addition of a third train. Future addition of third train = twice existing plant capacity.
3B	\$18.9M	Same as 3, but constructing entire building now for future savings. Future addition of third train = twice existing plant capacity.
2A	\$19.6M	Provides redundancy. Capacity for 100% expansion of the liquid process. Lose 1/2 of the capacity for maintenance.
3A	\$24.3M	Provides redundancy. Capacity for 100% expansion of the liquid process. No future foreseeable digester projects. Only lose 1/3 of the digester capacity for maintenance

Key Capital Improvements for Successful Implementation of Digestion



➤ **Raw Wastewater Screening:** Replacement of Existing Bar Screens

➤ **Grit Removal:** Replacement of Existing Facilities

➤ **Primary Clarifiers:** Replacement of Mechanisms, Baffles, Weirs and Concrete Rehabilitation

➤ **Aeration Basin:** Increase Blower Capacity, Diffusers and Modify Piping for Ammonia Removal

➤ **Final Clarifier:** Construct New Basin and Related Infrastructure

Rate Study Assumptions for JBS

Parameter	JBS Requested Loadings	Actual Oct 08 – Feb 09	Rate Study Mar 09 – Sept 09	Rate Study 2010 - 2013	March 2009 Averages
Flow (mgd)	4.0	3.0	3.0	3.0	2.7
BOD (mg/L)	400	1,132	847	600	427
TSS (mg/L)	300	397	372	350	220
O&G (lbs)	150	241	176	120	84
NH3 (mg/L)	100	143	139	135	111
Sulfides (mg/L)	60	163	156	150	191

- Reevaluate Rates at least every 3 years

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Rate Study

Anna White

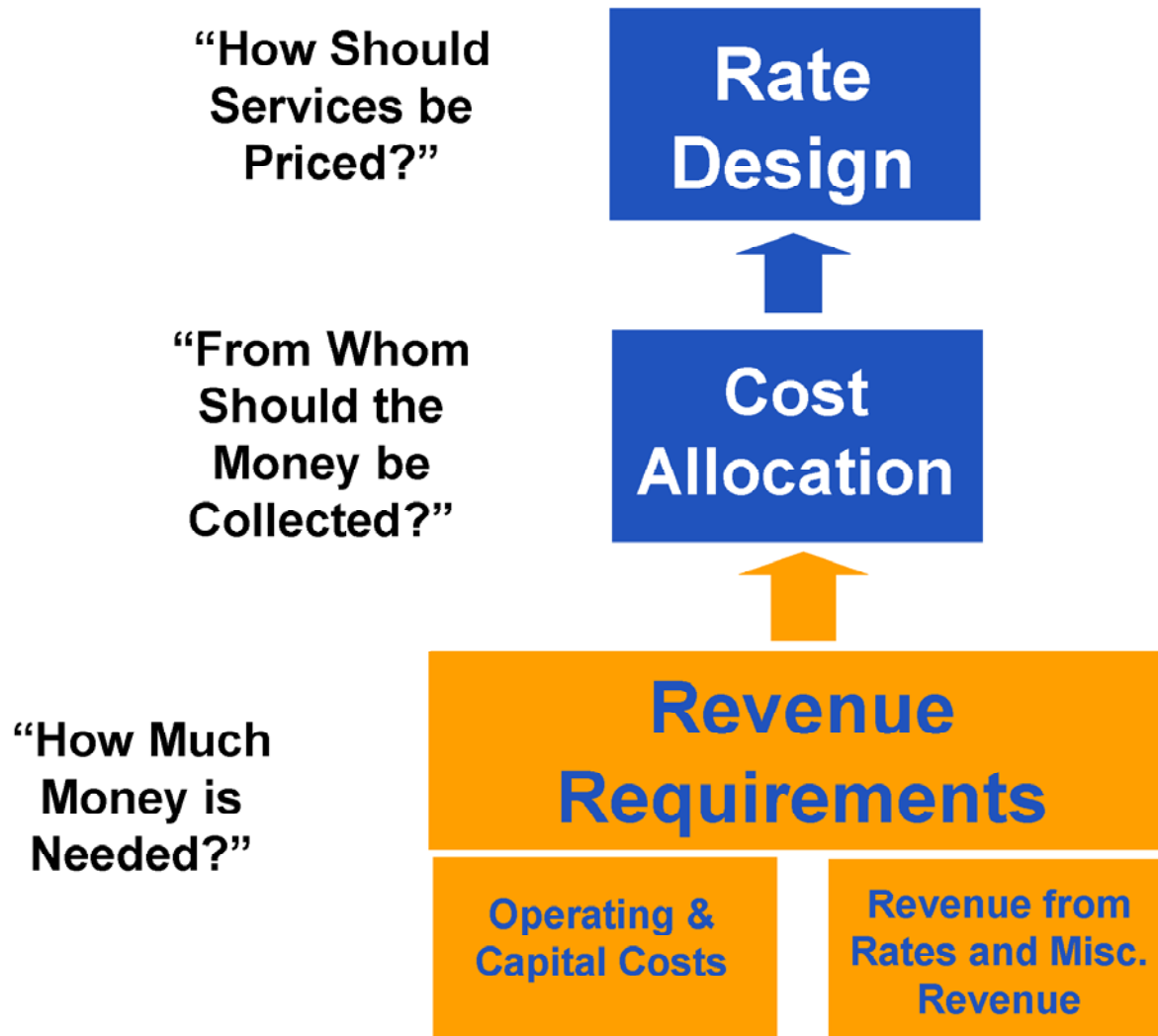
Cost of Service Focus

To match
the costs of providing service to individual
customer classes
and to **design**
rates to equitably recover costs

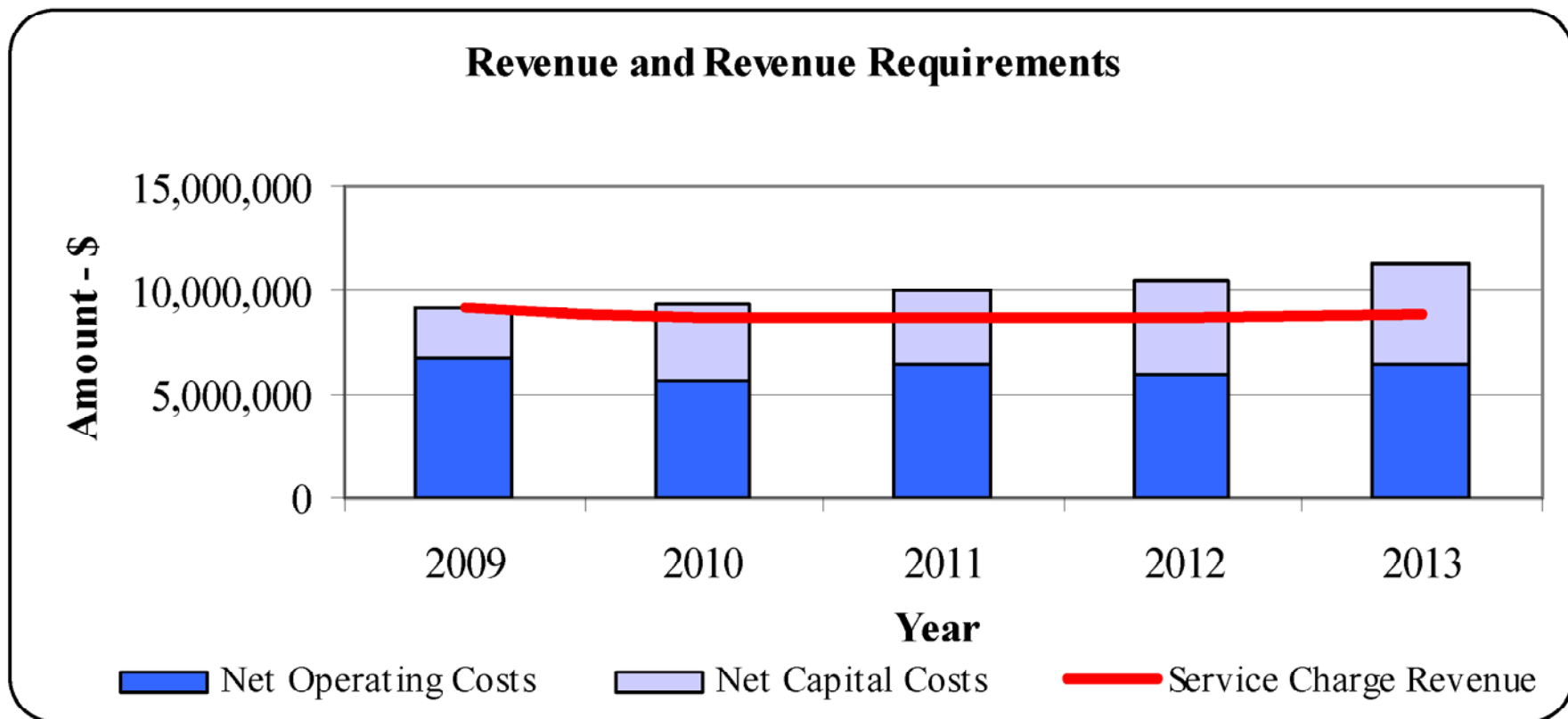
Key Issues of a Cost of Service Study

- Maintain Revenue Adequacy
- Use Fair and Equitable Cost Allocations
- Use Practical Rate and Billing Formats
- Minimize Customer Impacts
- Maximize Customer Understanding and Acceptance

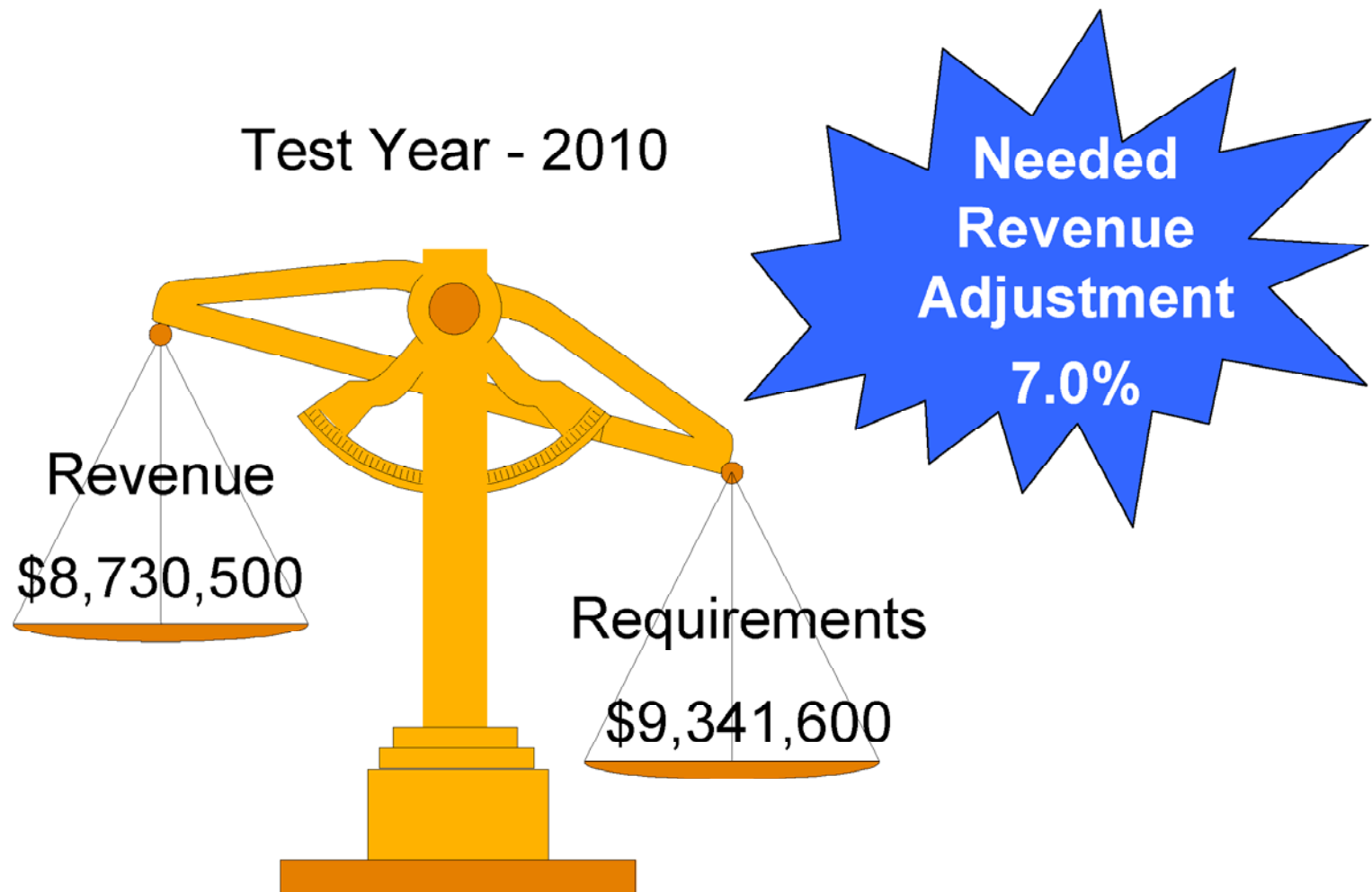
Cost of Service and Rate Study Process



“How much money is needed?” – Revenue Requirements



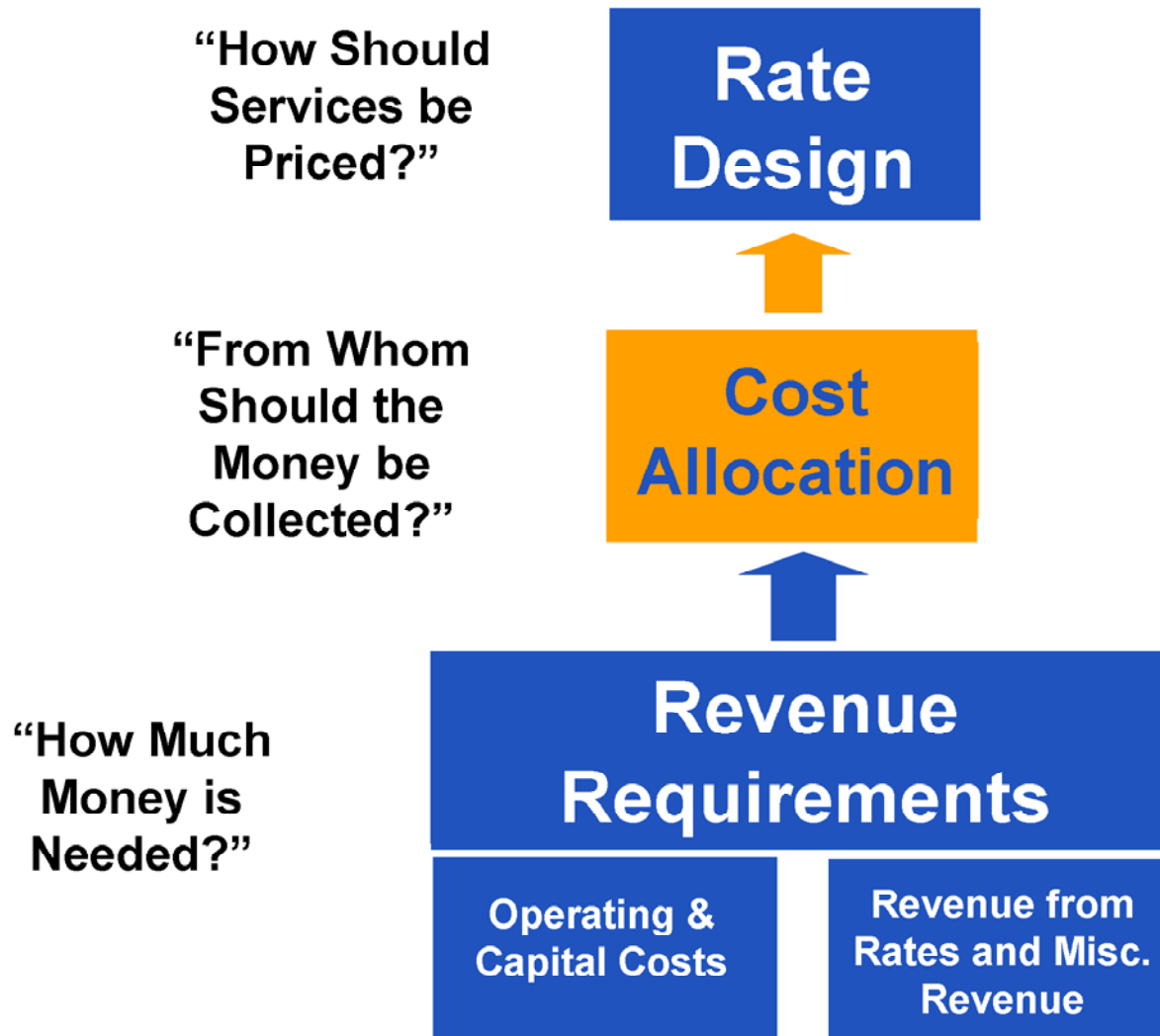
Review – Revenue Requirements



Cost of Service for Test Year 2010

Line No.		Operating Expense \$	Capital Cost \$	Total \$
Revenue Requirements				
1	Operation & Maintenance Expense	6,566,300		6,566,300
	Debt Service Requirements			
2	Existing Debt Service		1,785,900	1,785,900
3	Proposed Debt Service		0	0
4	Routine Capital Additions		246,300	246,300
5	Cash Financing of Major Improvements		2,200,000	2,200,000
6	Additions to the Operating Reserve	71,000		71,000
7	Total	6,637,300	4,232,200	10,869,500
Revenue Requirements Met from Other Sources				
8	Other Operating Revenue	540,900	30,000	570,900
9	Interest Income	14,400	126,600	141,000
10	Change in Funds Available	498,300	317,700	816,000
11	Total	1,053,600	474,300	1,527,900
12	Net Costs to be Met from Charges	5,583,700	3,757,900	9,341,600

Cost of Service and Rate Study Process



“From Whom Should the Money be Collected?”



Residential



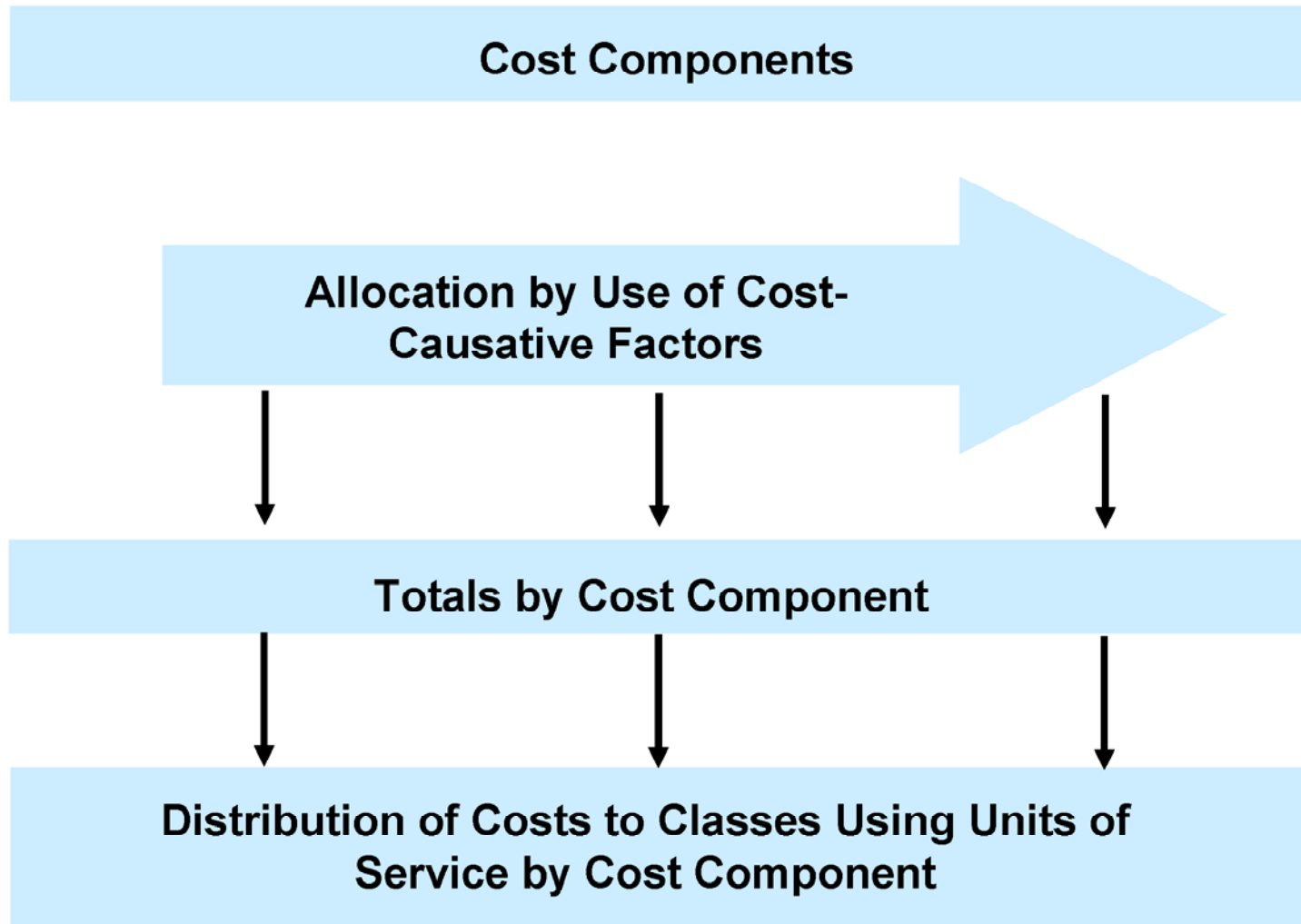
Commercial



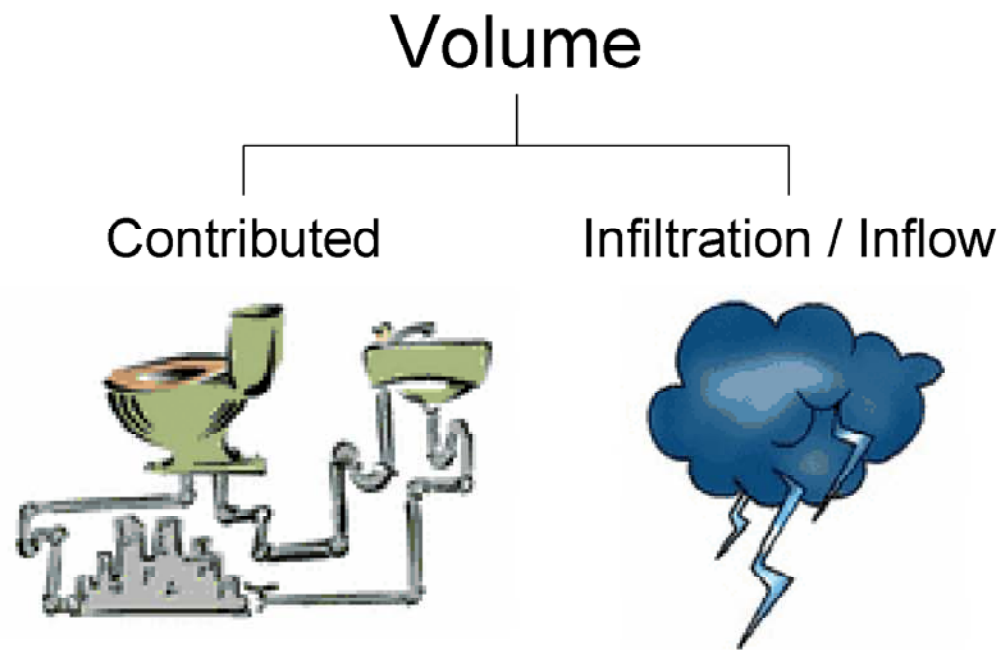
Industrial

**Who
Caused
the Cost?**

Cost of Service Process



Cost Causative Factors



Customer



Strength



Cost Components

Costs

Operating Expenses

- Operation and Maintenance
- Additions to Operating Reserve

Capital Costs

- Debt Service
- Cash Financing of Improvements



Functional Cost Components

Volume

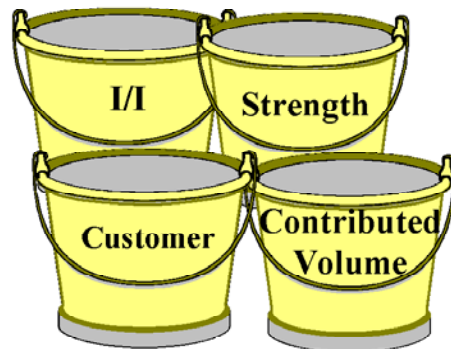
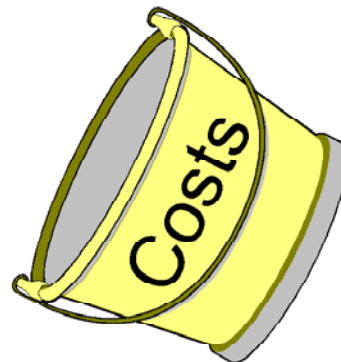
- Contributed + Infiltration/Inflow
- Common to All (CTA) versus City Collection System Users

Strength

- Biological Oxygen Demand (BOD)
- Suspended Solids (SS)
- Oil & Grease (O&G)
- Ammonia (NH₃)
- Hydrogen Sulfide (H₂S)

Customer

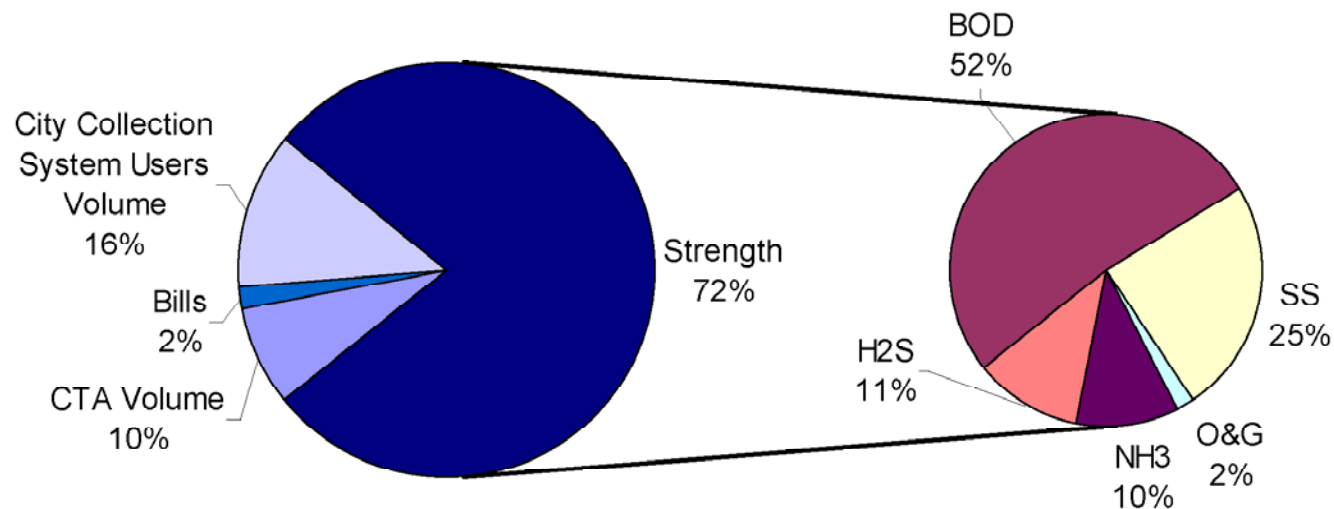
- Billing



Allocation of Operating Costs for Test Year 2010

- Based on Allocation of Operation & Maintenance Expense

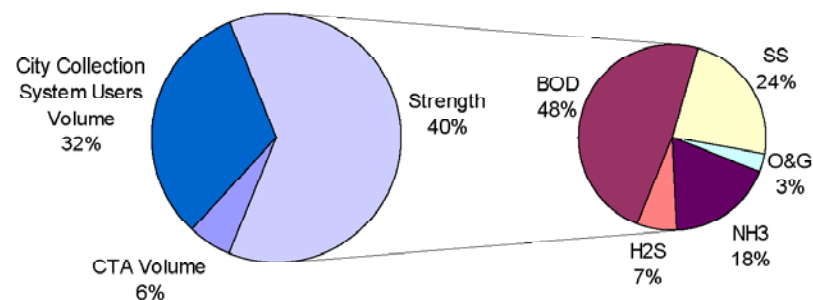
Allocation of Net Operating Expenses



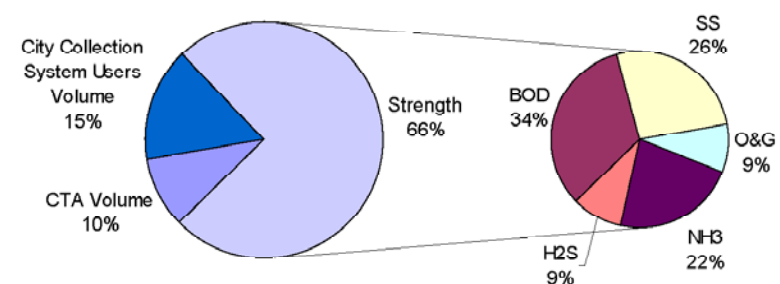
Allocation of Capital Costs for Test Year 2010

- Allocation of Existing Debt Service Based on Plant in Service
- Allocation of Proposed Debt Service Based on Proposed Capital Improvement Program

Allocation of Net Plant Investment



Allocation of Capital Improvements



Cost of Service Methodology

- Identify Customer Classes



- In Theory, Every Customer Has Different Service Requirements
- For Practical Purposes, Customers with Similar Characteristics are Grouped Together

Who Impacts Cost Factors



Residential

- Contributed Volume
- Average to High I/I
- Domestic Strength
- Customer



Industrial

- Contributed Volume
- Low to Average I/I
- Higher Strength
- Customer




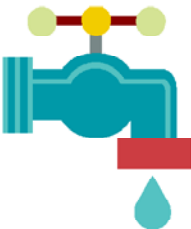




Commercial

- Contributed Volume
- Average I/I
- Domestic to High Strength
- Customer

Cost of Service Methodology - Determine Units of Service

- Volume
 - Contributed
 - Infiltration/Inflow
 - Customer
 - Volume
- Customer
 - Bills
- Strength of Wastewater
 - BOD
 - SS
 - Oil & Grease
 - Ammonia
 - Hydrogen Sulfide

Calculate Unit Costs

Costs	÷	Units of Service	=	Unit Costs
↓		↓		↓
Volume 	÷	Ccf	=	\$/Ccf 
Strength 	÷	Pounds	=	\$/lb 
Customer 	÷	Number of Bills	=	\$/Bill 

Ccf = Hundred Cubic Feet, 1 Ccf = 748 Gallons

Distribute Costs to Customer Classes

Volume Unit Cost x Residential Units (Ccf) = \$

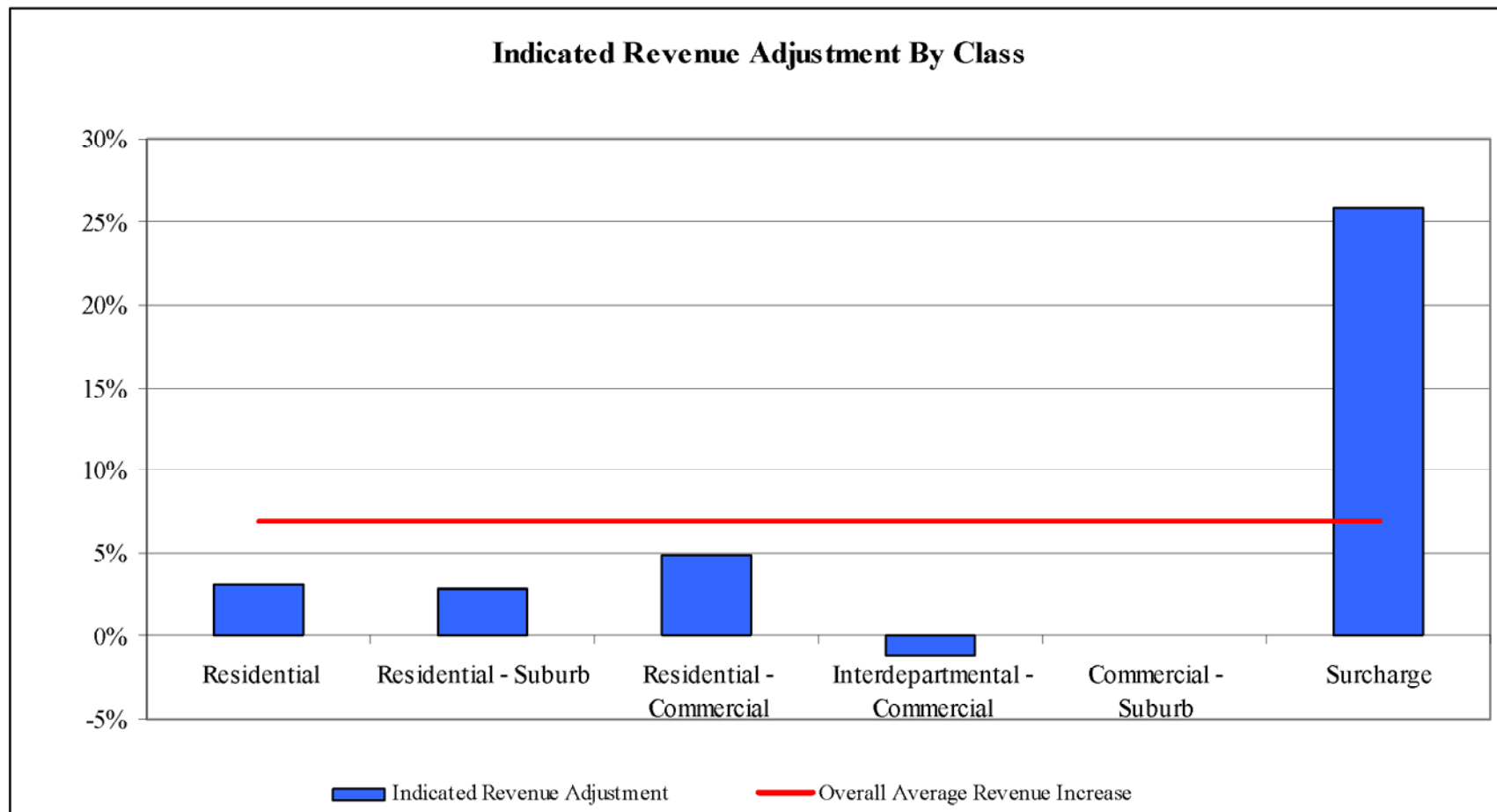
Strength Unit Cost x Residential Units (lbs) = \$

Customer Unit Cost x Residential Units (bills) = \$

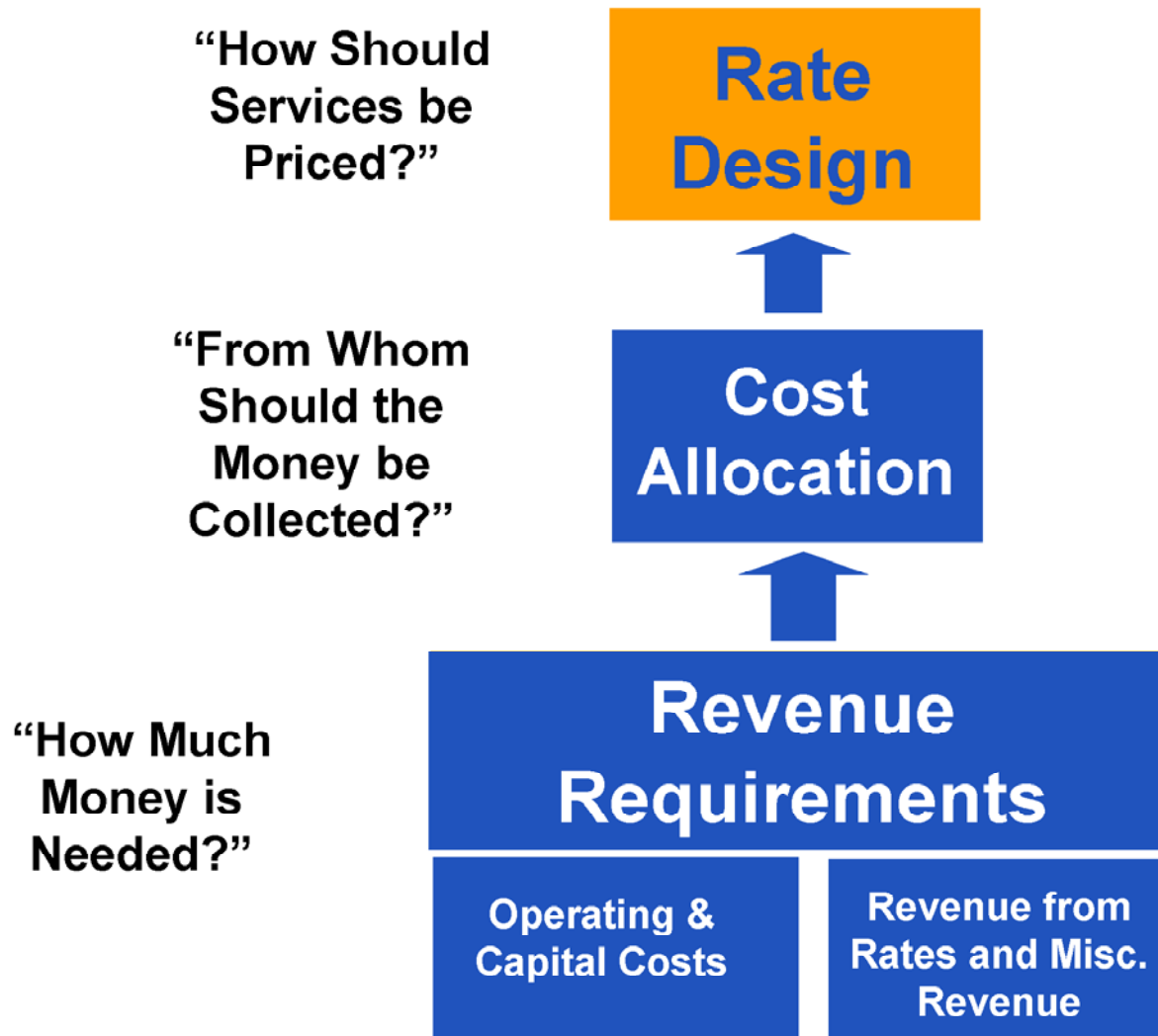
Total Residential Cost of Service = \$

Same Procedure for Remaining Classes

Results of Cost Allocation for Test Year 2010



Cost of Service and Rate Study Process



Rate Design Methodology - Process

- Review Suitability of Existing Rate Structure
- Examine Alternative Structures
- Design Cost of Service Rates
- Examine Impact of Rates on Individual Customers and Classes

Proposed Rates

Charges to be Effective October 1,

2009	2010	2011	2012	2013
------	------	------	------	------

Sewer Service Charge - \$/month

All Customers	8.24	8.24	8.24	8.24	8.24
---------------	------	------	------	------	------

Volume Charge - \$/Ccf

Low Strength Industrial Dischargers	0.42	0.58	0.77	0.93	1.13
JB Swift (a)	1.37	1.29	1.20	1.11	1.02
All Other Customers	1.37	1.45	1.68	1.88	2.13

Excess Strength Surcharge - \$/lb

BOD over 250 mg/l	0.2806	0.2797	0.3042	0.3143	0.3385
Suspended Solids over 250 mg/l	0.2180	0.2180	0.2180	0.2180	0.2180
Oil & Grease over 100 mg/l	0.0115	0.1465	0.1465	0.1944	0.2050

Low Strength Industrial Dischargers

BOD over 0 mg/l	0.2806	0.2797	0.3042	0.3143	0.3385
Suspended Solids over 0 mg/l	0.2180	0.2180	0.2180	0.2180	0.2180
Oil & Grease over 0 mg/l	0.0115	0.1465	0.1465	0.1944	0.2050

Ammonia over 30 mg/l	0.3729	0.5539	0.5701	0.6914	0.7256
Hydrogen Sulfide over 0 mg/l	0.1252	0.3569	0.3899	0.4558	0.4868
Hydrogen Sulfide Flat Fee - \$/month	8,376.29	9,160.00	9,160.00	9,160.00	9,160.00


NEW

Lower Limits

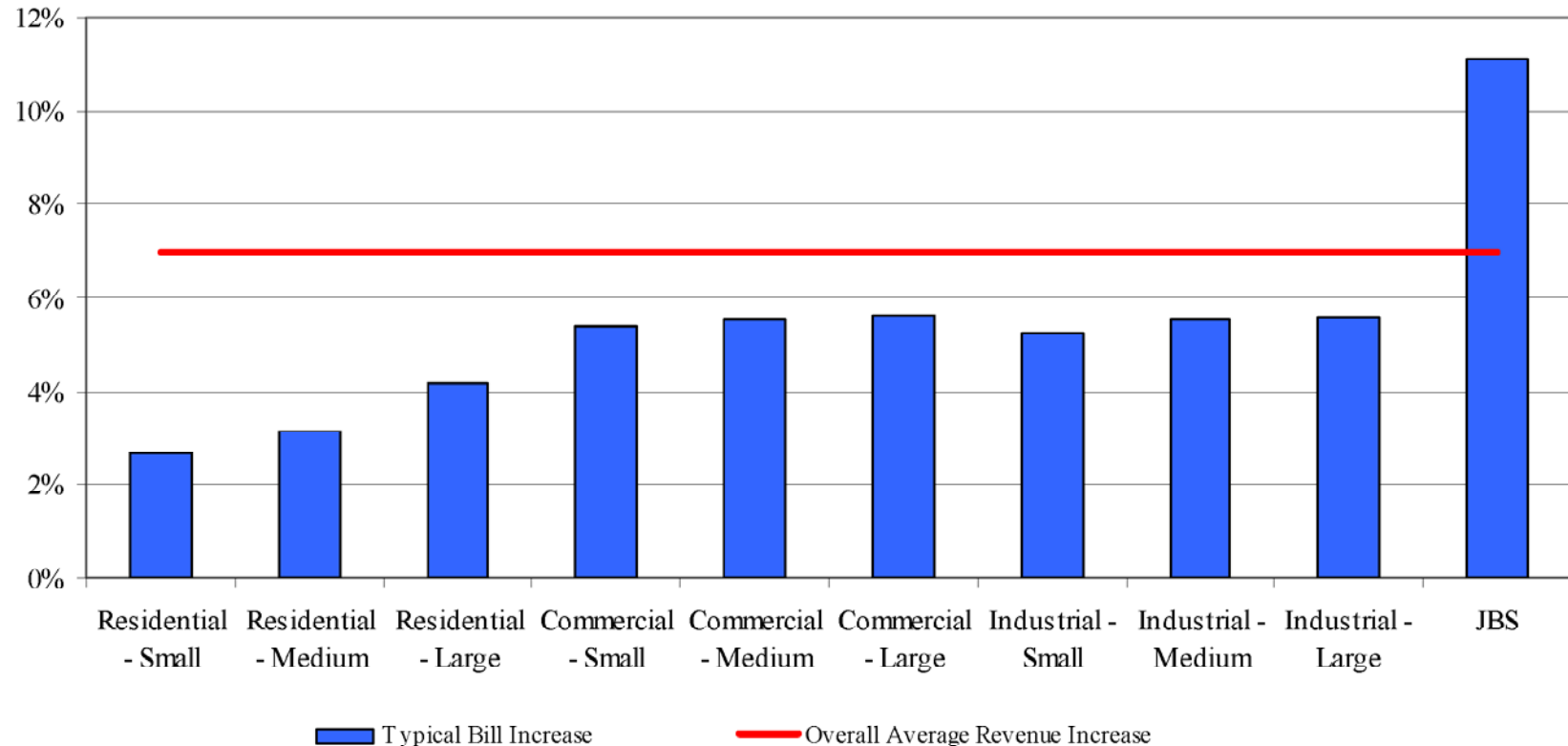
Typical Residential Bills

Line		Billed Wastewater	Existing	Typical Wastewater Bills (a)			
No.	Customer Class	Volume	Rates	2010	2011	2012	2013
		Ccf	\$	\$	\$	\$	\$
	Residential						
1	Small	5	15.09	15.49	16.64	17.64	18.89
				2.7%	7.4%	6.0%	7.1%
2	Medium	7	17.83	18.39	20.00	21.40	23.15
				3.1%	8.8%	7.0%	8.2%
3	Large	15	28.79	29.99	33.44	36.44	40.19
				4.2%	11.5%	9.0%	10.3%

(a) Percentage increase shown reflects change from previous year.

Impact of Rates on Customers for Test Year 2010

Typical Bill Increase Comparison by Class



Requested Action

- Approve moving forward with Option 2A for the Digesters
- Approve moving forward with finalizing the Rate Study recommending the proposed rates presented

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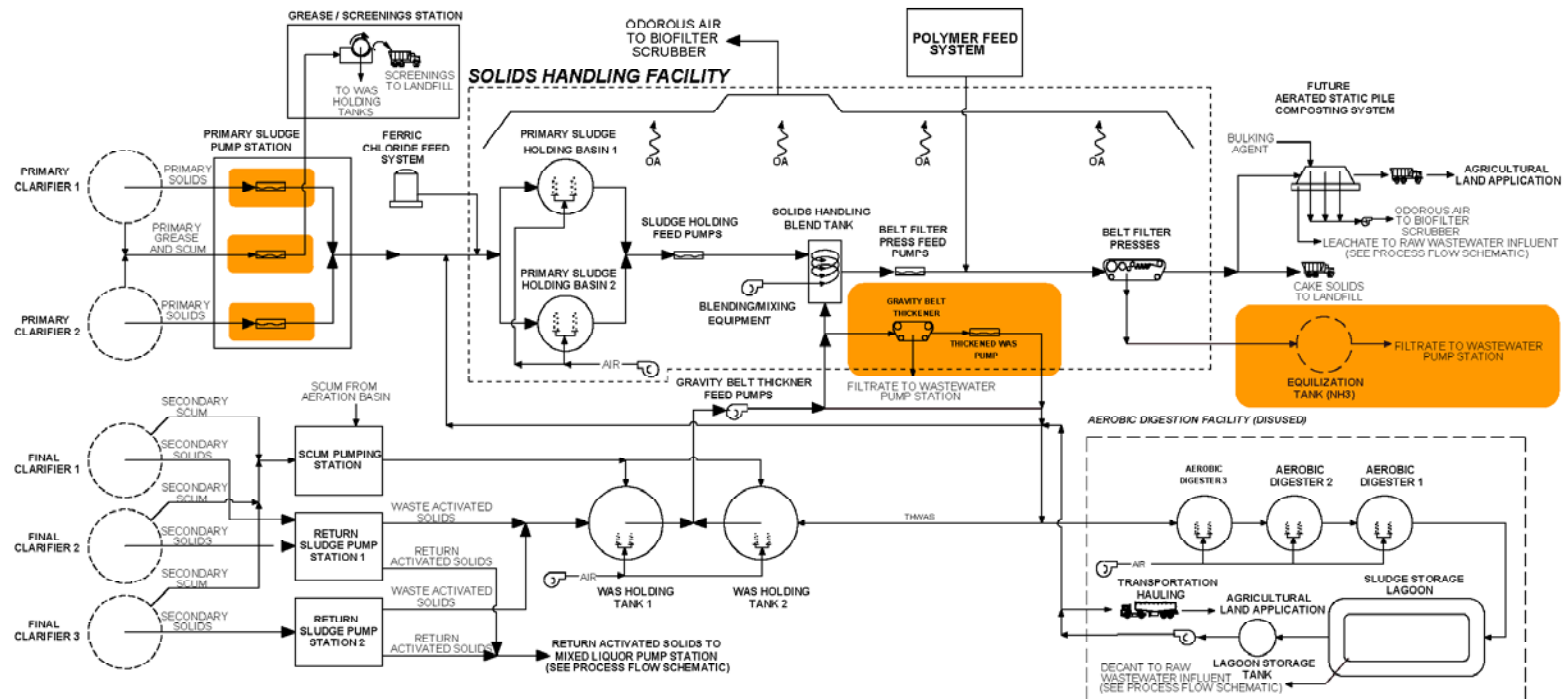


Questions??

April 21, 2009

Bill Stoner, Derek Cambridge, Anna White

Contingencies Associated w/ Integrating Existing Facilities



Existing Infrastructure that Affect Contingency Costs

- Primary Basin Sludge Pumping Equipment, Grease Pumping Equipment
- Gravity Belt Thickener and Thickened WAS Pump Equipment
- Filtrate Equalization (Ammonia)
- Anaerobic Digestion Complex (Key is Location, Location, Location)

GRAND ISLAND
WASTEWATER TREATMENT PLANT
SOLIDS FLOW SCHEMATIC

Capital Improvement Projects Included in Rate Study

Line No.		2009	2010	2011	2012	2013	Total
		\$	\$	\$	\$	\$	\$
1	Sewer Mains	1,250,000	600,000	1,600,000	600,000	1,600,000	5,650,000
2	Liquid Oxygen	0	0	0	0	0	0
3	Lift Stations	411,400	265,200	0	100,000	3,862,700	4,639,300
	Wastewater Treatment						
4	Raw Water Pumping	0	0	0	0	0	0
5	Preliminary Treatment	0	0	884,400	4,298,500	842,300	6,025,200
6	Primary Sedimentation/Clarifiers	980,100	0	0	0	0	980,100
7	Aeration Basins	0	0	0	0	0	0
8	Aeration Equipment	0	1,100,000	1,200,000	2,298,400	0	4,598,400
9	Corrosion/Odor Control Facilities	108,900	0	98,200	477,700	93,600	778,400
10	Final Clarifiers	0	0	0	4,652,400	0	4,652,400
11	Disinfection	0	0	0	0	0	0
12	Sludge Handling	2,126,300	6,300,000	9,734,400	3,543,300	0	21,704,000
13	General Plant	541,900	208,000	0	0	0	749,900
14	Lab	0	0	0	0	0	0
15	Vehicles	0	0	0	0	0	0
16	Administration & General	0	0	0	0	0	0
17	Land	0	0	0	0	0	0
18	Total	5,418,600	8,473,200	13,517,000	15,970,300	6,398,600	49,777,700